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## General Scientific

### THE MEDICAL SIDE OF THE CONNECTICUT WAR MANEUVERS.

FIRST LIEUT. H. SHERIDAN BAKETEL,  
Medical Reserve Corps, United States Army.  
New York.

The elaborateness of detail which characterized the medical preparations for the recent war maneuvers in Connecticut emphasized the lesson taught the medical authorities by the Spanish American War. Had the 20,000 troops, regular and militia, taking part in the mimic warfare, been about to engage in a veritable Armageddon, upon the result of which would depend the fate of the republic, no more care could have been exercised.

It was the purpose of those in charge of the medical side of the maneuvers to have them simulate conditions of actual warfare, and they succeeded admirably.

To Colonel L. Merwin Maus, M. C., Chief Surgeon, and Col. William Stephenson, M. C., Chief Sanitary Inspector, of the Eastern Division, United States Army, the successful accomplishment of the maneuvers from a medical standpoint is due.

They prepared the general plan and saw to it that every detail was thoroughly carried out.

In the neighborhood of 200 surgeons took part in the war game.

Aside from Col. Maus and Col. Stephenson, these medical officers of the regular army were present in various capacities: Majors W. H. Wilson, T. J. Kirkpatrick, B. H. Dutcher, Henry Page, A. E. Truby, J. R. Church, S. M. Waterhouse, M. A. Shockley, P. C. Hutton, P. H. McAndrew, G. McD. Van Poole, R. U. Patterson and J. F. Hall; Captains W. A. Wickline, A. H. Tasker, Ferdinand Schmitter, G. L. McKinney, E. W. Miller, J. M. Phalen, A. W. Williams, W. K. Bartlett, J. Clark, L. H. Hanson, W. L. Little, P. W. Huntington and W. R. Davis; First Lieutenants S. L. Chappell, K. W. Kennard, T. E. Scott, H. H. Van Kirk, A. P. Upshur, J. L. Siner, W. L. Sheep, and W. H. Myers, Medical Corps; and First Lieutenants Henry Clark Coe, Richard Slee and H. Sheridan Baketel, Medical Reserve Corps.

These officers served as regimental surgeons, chief surgeons, or sanitary inspectors, or were attached to brigades, field hospitals and ambulances or acted as umpire-instructors, their duties being to instruct the medical officers of the volunteer

service in their duties and to see that they properly submitted their official medical reports.

The infantry taking part included two brigades from New York, two from Massachusetts, one from New Jersey, one from Connecticut and regiments from Maine and Vermont. In addition there were several ambulance companies and regiments of cavalry, artillery and engineers with the usual number of medical officers attached.

The sanitary inspectors from the regular establishment were charged with sanitary instruction of the brigades, divisional field units or regiments, with which they were serving. As an example of the thoroughness with which Col. Stephenson and his inspectors carried out their duties, the outline of instruction for the Second Brigade, National Guard, New York, is given.

August 11th.—8 to 9 A. M., sanitary inspection of the organization camp; 9 to 10:30 A. M., lecture, subject, A. "Organization and duties of the regimental sanitary personnel;" B. "Equipment and operation of the regimental infirmary;" C. "Routine papers and administrative work within the regiment;" 2 to 3 P. M., Drill, School of the Soldier, School of the Squad, Detachment drill, Manual of the litter, Shelter tent drill, First aid, using members of detachment as patients.

August 12th.—Actual performance of duties in combat. The inspector should request authority from the organization commander to have as many men fall out as "Dummy wounded" as he thinks the sanitary resources can handle. Diagnosis tags should be prepared and placed on men who are to fall out, whenever possible, before the action, by the regimental or detachment surgeons.

August 13th.—Sanitary duties incidental to actual conditions on the march: 2 to 3 P. M., Lecture: "Camp Diseases and their Prophylaxis;" 3 to 4 P. M., Demonstration of construction of "straddle" trenches; ordinary latrine trenches for one night; kitchen incinerators of various types, etc.

August 14th.—Morning: Duties on the march; 2 P. M. to 3 P. M., Talk. Subject, "Sanitation on the March and in Semi-permanent Camps;" 3 to 4 P. M. (a) First aid and bearer work with litters, including use of ambulances, or (b) Demonstration of the use of equipment of regimental infirmary, or of equipment of field hospitals or ambulance companies, or (c) Tent drill; pitching shelter tents, pitching hospital tents and wall tents.

August 15th.—8 to 9 A. M., Detachment and inspections. First aid and litter drill, i. e., manual of the loaded litter, using members of the detachments as patients and applying first aid

to fictitious wounds; 9 to 10.30 A. M., Talk. "The Field Organizations of the Medical Department and the Functions of Each;" 10.30 to 11.30 A. M., Inspection of the camps of the nearest ambulance company and field hospital, with the explanatory comments; 2 to 3 P. M., Talk on map reading; 3 to 4 P. M., Tactical walk, introducing practical map reading and terrain exercises.

This is typical of the work carried out by the Medical Corps of all the brigades.

The ambulance companies were given this work in the morning: 9 to 11 A. M., combinations of the following: (a) Company or detachment drill; (b) Manual of the litter, and of the loaded litter; (c) First aid, including use of ambulances; (d) Bearer work without litters; (e) Improvising of litters and of travois; (f) Talks on the "Functions of Ambulance Companies," or "Camp Sanitation," or "Prevention of Camp Diseases," or "Medical Department Field Organizations," or "Map Reading" with practical exercises in a tactical walk; (g) Company and detachment inspection. 1.30 to 3 P. M., exercises in harnessing, driving, and ambulance drill; establishment of dressing stations; bearer parties connecting up with regimental aid stations and evacuation by ambulances from dressing stations to field hospital.



Col. L. M. Maus (right), Chief Surgeon, and Col. William Stephenson (left), Chief Sanitary Inspector, Eastern Division, United States Army.

The instructions for field hospitals were in many ways similar to those given for the ambulance companies. The orders called for careful supervision of watering and grooming of stock, the conduct and police of picket lines, and of camp sanitary arrangements and supervision of all formations.

Here is a typical day's work: 8 to 9 A. M., Practical exercises in camp sanitation; criticism of those in use and construction of new types for demonstration; 9 to 11 A. M., a combination of any of the following as time permits: (a) Detachment drill; (b) Detachment inspection; (c) Litter drill, manual and the manual of the loaded litter; (d) First aid work, using members of the detachment and applying dressings to fictitious wounds; (e) Use of appliances in the wards of field hospital; (f) Use of appliances in the dispensary of the field hospital; (g) Use of the equipment of the operating room in the field hospital; (h) Talks on: First, Camp Sanitation; second, Prevention of Camp Diseases; third, Map Reading and Practical Demonstration on Tactical Walks; fourth, Field Organizations of Medical Department; fifth, The Functions of, and the Administration of the Field Hospital. 1.30 to 3 P. M., Exercises in: First, Harnessing and driving; second, Packing equipment of field hospital in wagons; third, Putting up tents forwards and equipping same; fourth, A problem in establishing field hospital and handling fictitious wounded in the different parts of the field hospital, etc.

The instructors were ordered to see that proper transportation and attendance for actual sick and injured was promptly furnished when called for, and cases expeditiously conducted to local civil hospitals or to the railroad stations for transportation to other hospitals, and the inspectors on duty with



Col. Stephenson and Staff inspecting dressing station of Connecticut Brigade, located in the rear of a church in Newtown.

field hospitals were told to give close attention to the handling of the actual sick in those institutions and see that the necessary attendants accompanied such cases to their destinations.

In addition to other duties the regular sanitary inspectors were ordered to assist in the sanitation of the camps, location of medical units and finally to submit regular inspection reports at the end of maneuver for the work that had been accomplished.

It is to be regretted that the medical officers of the National Guard with few exceptions, were not impressed with the necessity and importance of submitting medical and personnel reports. They apparently regarded this work as a needless part of army routine and thus put the Chief Surgeon to needless trouble. While the National Guard officers were generally men of great professional ability they overlooked many matters which are absolutely essential in the successful conduct of the medical side of a military campaign. Another matter of real import which was very poorly carried out was tagging of four men from each company, two as seriously and two as slightly wounded and allowing them to fall out to be picked up by litter bearers and taken to field hospitals. The general officers of the National Guard failed to understand or see the importance of this work and did not appreciate the necessity of instructing medical officers in the combat service. They rather looked upon it lightly and postponed it until everything else was done, and in consequence it was greatly slighted. We saw several regiments which had no men tagged as wounded, as their commanders preferred to have every man on active duty, a condition quite different from that which would exist in actual warfare. Otherwise the combat service was performed satisfactorily, the field hospitals and ambulance companies taking the positions that were assigned to them by the medical officers under the direction of the Chief Surgeons of their respective divisions. There were six field hospitals in the entire command, which supplied one for each of the six brigades. As there were only four ambulance companies, two of the brigades had no ambulance companies, which interfered with the service.

The National Guard from a number of the states has not been furnished with ambulance companies and field hospitals. This is unfortunate, as they should all be supplied in proportion to the strength of their respective commands.

It was noticed that some commanders mistook the real mission of ambulances and used them as quartermaster's wagons for the transportation of hay and supplies and in one instance an ambulance gravely hauled several plethoric members of a civilian band, as these gentlemen insisted they had been engaged by the volunteer regiment to play and not to march.

The volunteer commanders were not alone at fault in allowing the prostitution of the uses of the ambulance. A lieutenant

colonel of regular cavalry is said to have ordered supplies loaded into an ambulance. He was captured by the enemy before the matter could be satisfactorily taken up with him.

On the whole the instruction was satisfactorily carried out during the ten days' maneuvers. Some of it was such as would ordinarily be given the camps of the Guard and other was the regular combat service.



Location of New York ambulance station. The wagon in the foreground contains the paraphernalia of the entire station.

For several weeks before the maneuver, the Chief Surgeon of the division furnished memoranda for the National Guard relating to instruction and to the sanitation of the camp.

The sanitation of the entire camp with few exceptions was adapted to field service transitory camps. Straddle pits and the Havard box were used in many instances. Lieutenant D. K. Lucas of the 22nd Battalion, New York Engineers, introduced a new feature in the way of camp sanitation pit system, a modification of the Havard box, which was quite simple and efficient.

His method consisted of two 10-inch planks, 10 feet long on the side and a number of hinged seats in the center that worked vertically. This box was carried about during the changes of camp sites in company wagons.

Very little sickness occurred during the maneuver and as a rule those who were disabled were young men who were not accustomed to long marches during the hot weather. Many of the men who were overcome by fatigue and heat were accustomed to the use of beer and had made the mistake of using that beverage during the brief campaign when opportunity presented. Endurance and ingestion of alcoholic liquors are incompatible. As an example it is not out of place to call attention to the 14th New York Infantry of Brooklyn. In this command discipline was unusually strict and there was no appreciable drinking. On one of the long marches which proved exceedingly trying, only six men of the 14th were sent to the ambulances on account of the ill effects of heat, fatigue or sore feet, while other regiments had scores of stragglers, from various causes.

Boards were organized in every camp to examine members of the National Guard on arrival and they were ordered to return to home stations all men found unfit for service. Such men were not taken up on sick reports, as they were already disabled. Men who became ill or wounded after arrival were transferred regularly to base hospitals. The officers and soldiers of the regular army who were taken sick after the maneuvers began were transferred to Fort Jay, Governor's Island, as a base hospital.

The State of New York arranged with St. Vincent's Hospital, New York, as a base hospital, Connecticut had a hospital in Shelton, and other states disposed of their men to other institutions. No sick or wounded men were kept in camp more than 48 hours at the outside, and the great majority were transferred within 24 hours.

New York organized a forwarding hospital through which all the men were sent who were returned to base hospital. The

field hospitals, used simply for demonstration, were movable, and changed camp every day or two.

The medical officers were enthusiastic in their duties, and particularly in the combat service. The United States government should organize schools for the medical officers of the National Guard in combat service and map reading so that each medical officer above the rank of captain could receive instruction similar to that given at Fort Leavenworth to the regular corps. Medical officers may be thoroughly conversant with camp, hospital and sanitary duties and know little about combat service. The medical corps of the United States Army is beginning to appreciate this fact and it is the intention of the Surgeon General to send all the field officers below the rank of Lieutenant Colonel to the school for instruction at Fort Leavenworth. Later on officers of junior rank as they approach the field grade will also be ordered there. Such procedure should be carried out in the case of the Medical Reserve officers on the inactive list and the medical officers of the National Guard. We believe every medical officer should be thoroughly conversant with map reading, topography and equitation, and have some knowledge of ballistics, and these branches can only be mastered in a course as described above.

There was a serious deficiency in the number of Hospital Corps and Ambulance Company men in the field in the Connecticut maneuvers. Every company on the firing line should have one of these men in addition to the surgeon and non-commissioned officer who accompany each battalion, but the dearth of hospital corps men did not allow this. More and better men are needed in the Hospital Corps of the army and National Guard and the proper officials should pay particular attention to recruiting to full strength this highly important branch.



U. S. Army Headquarters at Stratford, Conn., and tents of the chief medical officers. Three aeroplanes are ascending for a flight, one partly hidden from view by another.

In conclusion we feel the maneuvers gave the medical officers of the National Guard an excellent opportunity to "find themselves" in the detail of field service. They were alive to the necessities of perfection in field sanitation and instruction and they were deficient principally in failing to submit medical and personnel reports, a defect easily overcome. The volunteer medical men are thoroughly proficient in their professional duties, are intensely interested in military work and lack only the minor points which practice and a more careful attention to detail will make perfect.

The regular officers, who are accustomed to maneuvers and camp work, are enthusiastic over the results accomplished and believe that maneuvers of this kind are very essential to the upbuilding of the medical department of the National Guard. The spirit of coöperation manifested between the officers of the volunteer regiments and the regular establishment was refreshing in the extreme and portends much for the United States army and its National Guard auxiliary.

When there is persistent irritation of the throat without local cause, examine the chest. This may be one of the earliest symptoms of mediastinal tumor or enlarged bronchial glands.—(*American Journal of Surgery.*)

## ALCOHOLIC AMNESIA.

T. D. CROTHERS, M. D.  
Superintendent of Walnut Lodge Hospital.  
Hartford, Conn.

One of the common excuses offered by prisoners in court is that they have no recollection or consciousness of the act with which they are charged. This excuse is supposed to have been given to lessen the degree of responsibility and in some way diminish the punishment. A man charged with intoxication and petty crimes will assert, "I have no recollection of what I did, or any of the circumstances connected with it, therefore I plead not guilty." Further testimony shows, that while it is evident the man was under the influence of spirits, he was not stupid or delirious, but acted in a fairly rational way. On this he is convicted, and his defense of failure of recollection is considered untrue and childish.

The same excuses, or rather explanations, are offered in other circles, in business and social affairs, and are regarded with great doubt and suspicion. When the act is inquired into, and the prisoner's conduct before and during the act is examined, it appears to be true that he did not realize what he was doing, and that he could not have had any consciousness of it at the time, or his conduct would have been different. He was clearly suffering from some form of general and local palsy of the brain, which seemed to concentrate on consciousness and memory, leaving all the other activities of the body apparently normal.

Students of diseases that lie along the border line between sanity and insanity, and alternately passing back and forth, have been aware of certain local palsies of the brain, in which registration of events, consciousness and memory were completely cut off for a time, and these periods were literally blanks, which could never be recalled or explained. Common illustrations are seen in epileptics, who have paroxysms from which they recover with distinct blanks of consciousness. These blank periods have symptoms of abstractness of manner, reticence and other emotional changes, either very irritable or dull. Otherwise they seem to be natural and normal. Often injuries from blows on the head and shocks are followed by distinct periods of unconsciousness, and yet the person may act reasonably and be unable afterwards to recall anything that has occurred during this period. Persons who become stupid from drink, or act in a delirious, delusional way, are unable afterwards to recall anything that has been said or done, and this fact is verifiable by their later conduct. Often the events are gradually recalled, and memory seems to awaken and report the things that have happened. In other cases there is no recollection of anything which has occurred between certain definite periods. These are more or less common events, the causes of which are prominent and well known.

The conditions which are new, and have only recently attracted some attention, are those of persons who appear to be normal, who act and talk in the usual rational way, but are practically automatons; that is, they act without memory of the surroundings or relation of events. This is something different from double personality, or a mental condition in which the person acts from an entirely different point of view, and seems oblivious of anything that has happened in the past.

A number of very interesting cases have been published in which persons, after severe injuries or illness, have recovered and gone out and apparently began life over again, without regard to any experience or memory of past events. They are entirely different persons, living in a new world in which they have to learn everything as it is, regardless of the past. Their condition is called double personality, and is explained as loss of consciousness, which means the blotting out of the past and beginning life anew.

It has been observed that persons who use spirits in so-called moderation, that is, taking so much wine, beer or spirits daily,

rarely exceeding a stated amount, and are never seen intoxicated or apparently different from the normal, have distinct blanks of memory, or periods in which they are unable to recall any circumstances or conditions which have occurred. Such a case was a conductor who drank spirits at night only. Frequently he would have no recollection of events from the time of retiring until the next day. In the meantime he would arise in the morning as usual, take breakfast, resume his train work, collect the tickets, etc., and possibly be on a return trip, when suddenly he would recover his consciousness and be surprised to find that he was pursuing his usual work, but was not able to recall anything that happened the night before. To the train men he seemed very much the same, except that he was disinclined to talk, and acted in a mechanical way. When he recovered he asked the brakeman in particular what had happened, and seemed disturbed for fear he had neglected his duty.

This instance is typical of a great variety of conditions occurring in drinking men, principally in those who drink regularly, and is called alcoholic amnesia, that is, palsy of memory due to alcohol. Hence the repeated statements of persons in courts and elsewhere that they have no memory of the events in question may represent an exact fact, particularly if the person has been using spirits. His conduct during this supposed blank period may have been free from anything unusual or different, and even his acts may have shown a degree of wisdom and reason that was inconsistent with loss of memory or judgment. The fact is well known that persons intoxicated, either to the degree of stupor or delirium, cannot always recall what has happened, but their condition explains it. In this case the persons are neither intoxicated nor under the influence of spirits in the general sense of that term. They talk and act in a normal way, and yet say things and perform acts of which they have no recollection afterwards.

A number of very startling cases have been reported and studied at some length, all pointing to a distinct disease of the memory, personality and consciousness of the person. It is literally a paralysis, which shuts off the memory and the registration of things and events, and later when the causes are removed the memory comes back, but the period in which this palsy existed is effectually blotted out from the consciousness of the individual. There can be no doubt that such conditions exist to a very large extent, at present unknown. Men in prison serving sentences, who still assert that they are without any conscious memory of the acts for which they are punished, make these statements with so much earnestness and without any possible motive of its benefit to them as to be convincing, yet this condition was unknown and unstudied at the time of the trial.

Probably this statement of no memory is urged by alcoholics or men who have used spirits, either steadily or at intervals to excess, and while apparently offered as an excuse to diminish the punishment, is really a fact that is verified by other evidence than that of the victim's statements. Thus a man who is always gentle, affectionate, generous and kind to his family suddenly becomes harsh, brutal, dishonest and unkind, although apparently not intoxicated; then after a time he recovers and resumes his old natural attitude to his family. Something has taken place in his brain. Some local palsy has occurred which has suspended his previous character and caused him to act from a different point of view. His denial of recollections of what he did or said is true although unexplainable.

In one instance a lady who occupied a very prominent position in society, was wealthy and benevolent, and who drank wine steadily at the table, suddenly became a kleptomaniac. She would go to neighboring towns, visit the department stores, and steal everything possible that could be secreted about her person. The next day she would be surprised to find a variety

of articles and wonder why she purchased them. No thought of having stolen them occurred to her. Finally she was arrested, and the fact came out that she had taken these goods with unusual cunning. She declared she had no recollection of these visits or any of the circumstances associated with them.

A livery stable man whose character was above reproach, who had drank steadily for years, but never to stupor or intoxication, was arrested for stealing horses. It appeared that for a long time he had taken horses from the street or from the fields, drove them to his barn and simply said that he had bought them. When the owners came he gave the horses up without question and denied any consciousness of what he had done. It was proved that he displayed cunning, shrewdness and judgment in stealing horses and taking them to his stables, and later seemed very much excited to find the owners; claimed he had fits and sometimes denied that he had ever taken the horse. His associates said he was crazy to possess horses that attracted his attention. In other matters he was reasonable and apparently understood his condition.

A traveling man who drank regularly was noted as keeping a very minute diary of every event and of the persons he conversed with and what was said to him. Afterwards he explained that he suffered from loss of memory, and that he could not recall what had happened, except from his diary. At other times he seemed to be conscious of his surroundings and indifferent to recording the events. Then again everyone he met and talked with was noted in his diary. These were called his crazy periods by his friends. He was a proud man and had no confidants, but from a variety of evidence it appeared that the moment his memory became a blank he began to write everything; but he did not read these facts until the cloud lifted. Several interesting questions came up involving the price of goods, and the diary was offered in evidence, but why it was not continuous was unexplainable.

In a certain number of cases, where evidently the person has been conscious of his acts, most unusual events have followed. One that excited a great deal of interest was a most devoted son who was a club man and drank steadily. One day he killed his mother, went to the club and remained all night. The next morning when the body of his mother was found and the evidence pointed to him as the murderer, he was horrified beyond measure, and constantly maintained that he had not committed the crime. There could be no motive, and his relations to her were so tender that it seemed an impossible event.

Frequently most unusual business contracts are made; strange wills are written and later there is a most emphatic denial of participation in these events. Controversies growing out of them bring out this fact, that the person undoubtedly had some suspension of reason, memory and judgment at the time the act was committed. His condition was one of mental palsy, in which some part of the brain was practically paralyzed while the rest of the functions went on normally.

It has been observed that many persons who use spirits steadily, and are regarded as men of average ability, honest and above suspicion of anything unusual, suddenly become involved in dishonest acts, forge papers, sign notes, take advantage of others, and show an unusual weakness for brief periods, and afterwards are greatly distressed while trying to explain and recover from the results. An example of this was a very conservative man who condemned speculation in Wall Street and at intervals was found to buy stocks on margins and take the most reckless risks. Later he would recover and be utterly unable to explain why he did this. He was a moderate drinker. Evidently a morbid impulse took possession of him to speculate, while suffering from this blank of memory.

Curb brokers in Wall Street evidently have a large class of customers, among those suffering from alcoholic amnesia, or blanks of memory, where reason and consciousness are shut

off. These men become possessed with avarice and credulity, then disappear, apparently in disgust. Later they return under about the same conditions, make some purchases, lose of course, then deny that they have been there or even made the purchases.

The question of the mental integrity of a man who made a very large will brought out the fact that at intervals of two or three months for several years he had written strange wills, appealed to lawyers to enter divorce proceedings against his wife, and later denied all recollection of what he had done. The medical witnesses failed to make clear the evident aberration of his mind, and the judge finally decided that his last will was unsound.

A recent incident has become the subject of a very curious controversy. A literary man at a banquet made some most extraordinary statements. He was apparently sober and conscious of what he said, and at the time defended his views positively, and yet later denied that he ever said anything of the kind. When the matter was pressed for an explanation it appeared that he had blanks of memory, in which all recollections of what he did or said were emphatically blotted out.

The recent laboratory researches show that the effects of alcohol on the brain are anæsthetic, numbing the impressions that are received, and dulling the functions of the brain; and that memory, most of all, suffers from this palsy. This in a slight measure explains why it is so often seen in persons who use spirits. The fact has become established that a distant disease is likely to occur under a great variety of conditions in which the personality of the man is distinctly cut off, and no consciousness of his past remains. This has been attested in a number of very striking instances, that were utterly unexplainable by any theories of the present.

The question has been taken up by the American Society for the Study of Alcohol and Other Narcotics, and its committee has grouped a great variety of very startling instances that have been verified, and literally open up a new realm of mental diseases which has not yet been studied. This committee will soon publish a report which will constitute one of the new discoveries in mental diseases that will attract a great deal of attention and offer an explanation for conditions that have been very mysterious in the past.

#### Therapeutic Value of Mineral Waters.

The minimum medicinal doses of certain inorganic radicles that may be present in natural waters have been computed, and the general physiologic reactions following their introduction into the alimentary canal have been noted, reports R. B. Dale in "Mineral Resources of the United States," which is about to be published by the government in Washington. These minimum doses have been expressed as equivalent concentrations in a day's supply of 4 kilograms of drinking water. The strengths thus obtained are proposed as standards for differentiating between "medicinal" and common waters, the assumption being that water by means of which one medicinal dose of a physiologically active radicle could not be administered in one day would not have therapeutic value by virtue of its mineral content. This does not necessarily imply, however, that use of such water may not be beneficial, for the improvement in health following the ingestion of hygienically pure water under proper regimen of diet, exercise, and similar factors is thoroughly recognized. On the other hand, supplies exceeding the minimum concentrations that have been tabulated may not necessarily possess special medicinal value, as every reasonable allowance tending to lower the standards has been made.

Some natural waters have therapeutic action that may be attributed to the inorganic substances in solution. Many other waters, however, owe what curative effect they may have to their character as fairly pure waters, free from organic contamination and from deleterious mineral constituents.

## DYSPEPSIA.

ROBERT T. MORRIS, M. D.,

Professor in Surgery at the New York Post-Graduate Medical School.

New York.

Dyspepsia is a symptom, like a cough. As soon as we have made a diagnosis of dyspepsia it means that we have to make a diagnosis of something else. When there is pylorospasm or cardiospasm, a sneeze is added to the cough. Dyspepsia is not a diagnostic entity—nothing more than a sign that we are to proceed to a real diagnosis.

A certain number of dyspepsias belong in purely medical classification and are associated, both in acute and chronic form, with general diseases or with diseases of special organs, occurring as a symptom in the course of such disorders. I will not refer to the acute dyspepsias. Acute dyspepsias, or so-called "acute indigestion," are so often symptoms of perforating ulcer of the stomach, acute appendicitis, acute cholecystitis, or pancreatitis, that, like the term "ptomaine poisoning," their name is likely to be used to describe active symptoms of something else. This article would be too long if any elaboration of this feature were attempted. The chronic dyspepsias are the ones with which we have to deal in every day practice.

When a patient comes to the office complaining of dyspepsia, the first step for the physician to take is similar to his first step in dealing with fracture of the bones, namely—resort to the fluoroscope. The picture of the stomach with bismuth solution then places the case in a sort of general classification at once. We note the position of the stomach, rate of progression of the peristaltic wave, character of systole and diastole of the stomach, and obtain a first impression which will lead to further analysis along the indicated lines. For instance, if there is a halting of the peristaltic wave at a certain point at the pylorus, we may suspect the presence of an ulcer scar or of perigastric adhesions. (Analyses of gastro-intestinal contents give contributory data).

The next step consists in determining the nature of the mechanical obstruction. Perigastric and periduodenal adhesions constitute an important factor in a very large number of cases of chronic dyspepsia. Such adhesions appear to be due to a toxic impression for the most part, common to the conditions of modern civilized life, in which improper elaboration of food forces the liver to empty an undue proportion of toxins into the duodenum. This region then becomes a fertile field for the development of intestinal flora, both on the mucous and peritoneal sides. On the peritoneal side endothelium is desquamated, plastic exudate appears, adhesions form and remain more or less permanently. There is accession of adhesions from time to time, if the afferent vessels of the portal system continue to carry to the liver an undue proportion of toxins in cases not under good control by the physician. Chronic toxic processes in the vicinity, involving the gall-bladder and pancreas, frequently in a chronic way, are easily overlooked unless we open a vista with the fluoroscope. If the X-ray on first examination of the stomach does not give us an indication of mechanical interference of any sort, and if the patient is known not to have any of the organic diseases which plainly include dyspepsia among their symptoms, we are next to take up the question of probable influence of peripheral irritations.

Peripheral irritations of many kinds in susceptible patients lead to a demonstration at the great nerve centers, influencing gastric ganglia. Eye-strain is one of the very common peripheral irritations with chief demonstration at the stomach. Fibroid degeneration of the appendix supplies another extremely common cause for chronic gastro-intestinal disturbance. Terminal filaments of nerves engaged in hyperplastic connective tissue in the contracting appendix are irritated, and excite

a long train of symptoms in various abdominal ganglia. The presence of gall-stones in the gall-bladder, even when they do not try to escape, seems to excite the sympathetic nerves in such a way as to make chief disturbance in the stomach and bowel. Nasal hypertrophies may make the most important demonstration of their presence in dyspeptic symptoms.

Loose kidneys are frequently primary factors in precipitating symptoms of dyspepsia. It is important in this group of cases to separate the loose kidney which has slipped out of Gerota's capsule as the result of an accident, from cases in which loose kidney is associated with a panoptosis with general relaxation of peritoneal supports. Where "loose kidney" occurs singly, fixation of the kidney will often relieve dyspeptic symptoms. We may prove this out in advance of operation by supporting the kidney with proper apparatus. If a good effect of temporary support is in evidence, surgical fixation is next in order for permanent effect. Surgical fixation of a kidney can be done in ten minutes, if one chooses that sort of operation, and leads to less inconvenience than the continual wearing of supports.

Dyspepsia as a symptom is very common with the neurotic and neurasthenic group of patients who have an inheritance of defective protecting organs. In this group of patients we have to be guarded in describing to them the probable good result of any operative work aimed at the dyspepsia. In these neurasthenic patients operations sometimes give brilliant results—sometimes are failures—unless one takes time enough to make a very careful analysis of any given case, before proceeding to action. Many patients of neurasthenic habit, however, are very susceptible to the influence of peripheral irritations, and it is well to think of the peripheral irritation as a precipitating factor rather than as a causative factor in the dyspepsias of this class of patients. It is well as a rule to tell neurasthenic persons that removal of the precipitating factor will make them better, but will not cure all disturbances derived through inherited tendencies. For instance, a patient with eye-strain may pass through stages of functional derangement of the stomach, marked in turn by hyperacidity, hypoacidity and gastric myasthenia, and when the eye-muscle imbalance has been corrected dyspepsia disappears, to return perhaps in almost the same form, if the patient later develops a condition of loose kidney, or suffers the shock of a great grief.

The chief point which I wish to make is this—that in practically all of our cases of chronic dyspepsia we are to begin with the fluoroscope before attempting treatment, and we are to make a more elaborate analysis of cases than has been the custom in the past, when the doctor gave the patient prescriptions for a while, and thought he was well because he did not return, the fact being that the patient was already in the office of the second or third or fourth physician, or buying patent medicines.

Now that preventive medicine is lessening the total number of patients in the physician's clientele, dyspepsias will be given the time and study they have always required and have seldom received. Most of them are quite curable when the fundamental causes have been properly worked out.

Treatment of dyspepsia may be classified by periods in the history of civilization—(1) Early historic—treatment of "dyspeptic humors," sometimes through bloodletting; (2) employment of things known to relieve certain symptoms—temporarily at least, and establishment of dietary plans; (3) use of fluoroscope, and elaborate search for causative factors which are removable.

The American Medicine Gold Medal for 1912 has been awarded to Col. William C. Gorgas, Medical Corps, United States Army, health officer of the Canal Zone, as the American physician who has performed the most conspicuous and noteworthy service in the domain of medicine during the past year.

## TREATMENT OF EMPYEMA IN CHILDREN.

FRANK C. NEFF, M. D.,

Pediatrician to the Kansas City General Hospital,  
Kansas City, Mo.

The treatment of empyema includes the general welfare of the child and the surgical care of the chest on the affected side. There is a difference in the handling of acute and long-standing cases. As infants have a much higher mortality than older children (stated in infants as 75 per cent., while in children over two years the majority recover), and as they do not react so well to severe surgical procedures, operations which are less severe should be employed.

## GENERAL TREATMENT.

As general measures which should be used in all cases I will simply enumerate the following:

1. All the suitable nourishment that the child will take.
2. Such tonics as will improve the appetite, aid in nutrition and increase the child's resistance.
3. Plenty of fresh air in the sick room, preferably keeping the patient in an open air room or ward.
4. Attention to the bowels, kidneys and skin.

## SURGICAL TREATMENT.

All agree that the handling of the collection of pus or infected effusion is surgical, and that evacuation is necessary. In former years aspiration of all the fluid was frequently tried, but now aspiration is used merely for diagnosis and localization. Some pediatricians<sup>1</sup> have advocated waiting a few days until the high fever subsides, claiming that the children do better if operated upon when the temperature is down.

Still<sup>2</sup> believes it is important to open the chest as soon as possible in every case, to avoid subsequent pneumococcal infection of the meninges and pericardium. Although spontaneous absorption sometimes occurs, he thinks there is danger of spreading the infection and of developing a chronic fibrosis if the empyema be not opened. He states that if after opening the chest the temperature does not come down there is possibly pus which has not been reached, due to adhesions, involvement of the opposite pleura, or rarely of the mediastinum.

Lloyd voices the modern opinion that operation should be done early, as soon as empyema can be demonstrated. Opinions vary as to the wisdom of allowing all the fluid to be evacuated immediately, because of danger from shock. The usual methods, however, require several days before most of the pus has escaped.

## OPERATION IN INFANCY.

Lloyd states that because of the barrel-shaped chest and the relative wider intercostal spaces in infants a simple incision is sufficient, and drainage is freer than in older children.

If in any given case there is room for a drainage tube between the ribs without occlusion of its lumen by compression there would seem to me to be no argument for any method more radical. Most parents would object and most of us would hesitate to employ resection of a rib in an infant, because of the greater attending shock and the subsequent deformity. Douriez<sup>3</sup> states that rib resection in nurslings is a distinctly dangerous operation and should not be resorted to unless other means fail. Alfred Hand, Freeman, Rotch and Adams<sup>4</sup>, in discussing empyema in infants, agree that simple drainage without resection is the proper method.

Vipond<sup>5</sup> advises stimulating crying in infants to aid in expansion of the lungs.

## OPERATION IN OLDER CHILDREN.

In older children the operation may if necessary be more extensive both as to time and area. A longer anaesthesia and larger field of exploration may, if needed, be employed. The greater size of the pleural cavity may require freer drainage. Rib resection may be necessary for this purpose as well as to allow the approximation of the visceral pleura and chest wall. It is seldom in acute cases, however, that such a radical meas-

ure is required, as such children can be given breathing exercises and gymnastics which assist in lung expansion. In acute cases without fibrosis the lungs will readily expand to their former degree.

## SURGICAL TREATMENT.

It is not necessary to go into detail in regard to surgical treatment. Cleanliness and the care of the wound are as important here as elsewhere. As regards the pain of the operation one sees many children with whom an anæsthetic is not necessary and in some cases not advisable, though in susceptible children and in the cases which require more extensive work ether or nitrous oxide may have to be given. The location of the puncture at the most advantageous site and at a point which it seems to me interferes the least with the child's comfort in bed is advisable. Numerous methods of drainage have been employed. Bendix, of Berlin, recommends the introduction of a catheter through a trochar, which in simple, early cases will probably be sufficient and is easy, rapid and productive of little shock. In a few days, as the opening becomes larger, a tube of greater calibre can be substituted. Samuel Robinson<sup>6</sup> believes in the constant application of suction in acute and subacute purulent pleurisy, with an airtight thoracotomy wound to prevent leakage, using a threaded metal tube. E. Ewald<sup>7</sup> states, what is generally agreed upon now, that one should avoid irrigation of the pleural cavity. When the secretion from the wound decreases to only a few drops daily he removes the tube.

The method most commonly in use in this country is the simple incision, the introduction and anchorage of a double rubber drain, and its gradual withdrawal as the discharge becomes less. The introduction of the little finger to break up existing adhesion saves time in convalescence and the necessity for a second operation.

## VACCINE THERAPY IN EMPYEMA.

In postoperative persistent cases the use of an autogenous vaccine would seem to be rational and, so far as my observation goes, has been of distinct value. The withdrawal of the drainage tube sometimes causes the discharge to cease, therefore one should exclude such cases in estimating the results obtained from vaccination.

Trimble, of Kansas City, reports decided benefits and cures in pneumococcal infections with infections of 50,000,000 dead organisms, larger doses in staphylococcal infections, and in mixed tuberculous cases. The interval of injection is from seven to ten days. The report of a number of cases by Maroow<sup>8</sup> is of decided interest in the treatment of tuberculous cases, in which the effusion was absorbed following the injection into the subcutaneous tissue of 2 c.c. of the patient's own fluid.

With the present limited literature concerning the use of vaccines in empyema one cannot as yet correctly estimate its value, but enough has been done to show that some cases at least are benefited.

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A history of discomfort and oppression in the chest and throat after eating, relieved by induced vomiting, suggests cardiospasm.

After a transpleural intrathoracic operation, as on the esophagus or lung, air-tight drainage of the pleural cavity must be provided for.—(*Amer. Jour. Surg.*)

## THE MICROZYMAS IN THE HEN'S EGG.

ROBERT LINCOLN WATKINS, M. D.,  
New York.

Beechamp has demonstrated that the microzymas are the constituent and physiological basis of all anatomical life. Starting with this premise it would follow that the microzymas are a constituent of the liver, lungs, bones, cells and the blood and are therefore the basis of the work of the hematologist.

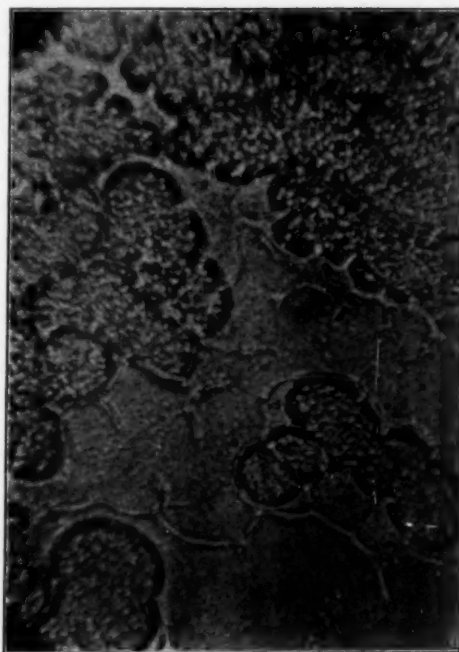
Before my class I generally use a hen's egg to elucidate this subject, as it is easily obtainable and is a suitable object for demonstrating what is known as the microzymian theory.

The hen's egg is composed of three principle parts, the shell, the white and the yolk. Inside the shell is a very delicate but tough membrane, similar in toughness to that which covers the human brain, and quite as impervious to germs as is the shell. Next to this membrane is the white or albumen of the egg enveloped in a thin membrane, and inside of the white the yolk is likewise enveloped in its own thin membrane.

It has been supposed and by many is still believed that the white and the yolk contain no anatomical elements, but that they are a homogeneous mass of albumen, proteids, and other substances found on chemical analysis only. But there are minute physiological elements both in the white and the yolk of all kinds of eggs, called microzymas. They are enveloped in a vitelline membrane and in their naked condition can only be seen under a microscope of high power. This vitelline membrane, if I may be allowed the term, is a covering consisting chemically of lecithin, albumen, phosphorous, chlorestine and other ingredients, the composition being generally similar to the microzymas and that of the cell protoplasm. These ingredients vary according to the location and function of the special microzymas, as they inherently vary in themselves in various organs; for instance, those of the heart are different from those of the stomach, just as those of the stomach differ from those of the blood cell. In the same fashion the microzymas of animals differ from those of man and it must be remembered in looking for them that their shape is always round as is the vitelline membrane which conceals them, except when they are diseased. If one wishes to demonstrate these organisms in the egg, one will break the shell and let the liquid albumen run into a saucer, allowing the yolk to flow into a glass of water. The yolk will remain intact and will still continue perfectly round because its surrounding membrane is not yet ruptured. Next the investigator should take a pipette and penetrate the membrane to the interior of the yolk, removing some of its contents and placing the specimen on the microscopic slide. By using a  $\frac{1}{4}$ th objective and a 2-inch eyepiece he will be able to see the enveloping membrane with the microzymas within. They are perfectly round and distinct and about  $\frac{1}{50,000}$ th of an inch in diameter. They are so numerous that it is impossible to count them, probably existing in billions. Heating the slide will make them more observable.

When one has thus seen the microzymas in the egg he is convinced that it is not made up of a homogeneous mass of protoplasm, but that microzymas are always found in its composition. On examination of the white of the egg with the object of finding microzymas they are invisible because their index of refraction is the same as that of the surrounding media. But if the white be heated, or whipped or HCl or dilute  $\text{HNO}_3$  be added to it the microzymas plainly come into view. Care must be exercised, however, that the acid does not eat the lens. If heat is applied there is no danger of this and they are seen with their coats on, but the acid is likely to expose them in their naked condition and then a  $\frac{1}{12}$ th objective is required, for their bodies are necessarily smaller naked, than with their albuminous covering.

In human beings microzymas show themselves in red blood



Micrag of Microzymas with their coats on.  $\frac{1}{7}$  objective.  
All enclosed in air bubble.

cells when the blood dries slowly on a glass slide under a cover glass, i. e., just as we place it when we are ready to examine it under a microscope. The addition of a little acid will dissolve the outside membrane of the blood cell and the microzymas can be more plainly seen. When blood crenates each crenation is the outlined landmark of one or more microzymas which exist within. Blood cells always crenate on standing, but when such cells occur in abundance in freshly drawn blood it is indicative of a lack of vitality.

Microzymas are also observed in human saliva and urine. In the former a little acid will bring them out and in the latter they are present, and in my opinion constitute most of the middle cloudy precipitate seen in most urine soon after being voided. Microzymas constitute most of the cloudy enigma upon which physiologists used to place so much importance, especially in the urine of pregnant women.

The human egg is composed of microzymas. As the fertilized human egg develops into a human body the microzymas increase in number as the cell does, the same principle being involved in both. It is a fact well substantiated that these minute active ferments are found in the cell, the tissues and all the organs; in short, they are to be found wherever life exists. They are like bees in a hive, always living and always ready to manufacture something. This is usually a cell, a ferment, a vibron, a bacillus, a filament or some higher organism of its own kind, and they even produce enzymes and ptomaines as by-products. When acetic acid is added to a blood specimen to dissolve its red cells and expose to plainer view the white, as is done in counting, it is the microzymas with their coverings that we see in the white cells.

Under certain conditions the elements which compose the egg may be transformed. It is well known that if eggs are not carefully packed they spoil. If a hen's egg is so well shaken up that its membranes are ruptured it will place these physiological elements in an abnormal condition; it will change the environment of these living healthy microzymas, giving them new surroundings which are unnatural. In their activity they decompose the constituent parts of the egg. As a result of this decomposition sulphuretted hydrogen and other gases are produced and the microzymas transform themselves into

bacilli, vibriones, filaments, etc., and the consequences of the transformation is disease or, as we commonly refer to it, a rotten egg. The rotting is not so much produced by germs entering the egg from the outside as from the transformation of the mycrozymas within the egg. If one takes an egg that has been shaken and becomes rotten and examines a portion through the microscope he will find that vibriones, bacteria, filaments and other entirely different germs will have developed even to the formation of worms and parasites. In the human blood, examined under the microscope, we find the same thing occurring when there is septic material in the system. Its microscopic life, as well as that of the spoiled egg, remind one of the contents of a cesspool or an old-fashioned country privy where the active micro-organisms are seen by the billion. I wish to call attention to the fact that most of the micro-organisms in septic blood originate within the system rather than from without. Thus in treating disease it is necessary to eliminate these things before the sepsis will disappear.



Migraf of Naked Microzymas. Treated with dilute HCl. Mass in air bubble. 1/12th objective.

Theoretically, according to the carefully built-up scheme of some evolutionists, the fact has been established that the germs of all the animals below the hen exist in the hen's egg. That is to say, from the plants up the germs of the hen's egg have produced animal life. Evolving on the same basis regarding the human egg, very much the same thing may be said, only a much greater variety of animals must be taken into consideration.

To summarize, I have spoken of the microzymas in a healthy condition in a good egg, and I have told how to see the microzymas in a rotten egg. The egg becomes rotten through shaking or some outside influence. So in the human being its microzymas are transformed through a similar process. The outside influence and especially the germs within, therefore, may be said to be responsible for all diseases in human beings as well as in all the lower forms of animal life.

#### A Collecting Urine Device.

F. van der Bogert, Schenectady, N. Y. (*J. A. M. A.*, June 8), after mentioning the difficulty of collecting urine from female infants, describes a method he has used with success, suggested to him by a parent. It consisted of fastening a firm cloth tightly like a drum-head over the rim of an ordinary large wash-bowl, on which the baby lies fairly comfortably. To avoid the filtering of the urine through the cloth, a small opening can be made in a convenient place. Specimens thus collected will necessarily be contaminated, but not more so, he thinks, than those obtained by various infant urinals or by other methods.

In ten months of 1911 over 900 operations for goitre were performed in St. Mary's Hospital, Rochester, Minn., with a mortality of 1 per cent.

#### A SIMPLE METHOD FOR TESTING THE MOTOR FUNCTION OF THE STOMACH.

S. T. LOWRY, M. D.  
San Antonio, Tex.

Among the various tests devised for noting any variation from the normal in the motor function of the stomach, probably the most universally used is the Riegel test dinner. This is given in the evening, expressed the following morning and any retention noted. The administration of bismuth mixture followed by a series of x-ray pictures, taken at intervals of four, seven and twelve hours, is also of great value in studying motor disturbance. The method which I have used for the past year is very simple and may be carried out in the office with little or no unpleasant effect to the patient. Preferably on a comparatively empty stomach, I have the patient swallow the duodenal tube or pump, devised by Einhorn. As soon as the tube has reached the stomach, I extract two or three c.c.'s of the gastric contents in order to determine the reaction which in the great majority of cases is acid. The patient is now requested to lie on the right side for one hour, at the expiration of which time I again withdraw one or two c.c.'s of the contents and if the reaction shows alkaline, denoting the contents to be from the duodenum, I then know the tube has passed the pyloric orifice and am thus able to form some idea of the activity of the motor function. I can also get quite a definite idea of the size of an object that may pass into the small intestine in cases of suspected stenosis.

At the conclusion of an hour if the reaction still shows acid I repeat the examination at twenty minute intervals until I find the tube has reached the gut, basing my conclusions as to the degree of insufficiency or stenosis on the time required for the tube to find its way from the stomach cavity into the small intestine. While perhaps not quite so accurate as some of the other methods of determining motor insufficiency and stenosis, I feel that its simplicity, together with the absence of disagreeable features to the patient, make it a valuable adjunct to the equipment of the man doing stomach work.

#### CLEAN TEETH DO DECAY.

J. P. ROOT, D. D. S.,  
Editor of the Western Dental Journal.  
Kansas City, Mo.

In the August issue of THE MEDICAL TIMES in the "Medical Editorial Table" is a clipping from the Interstate Medical Journal headed "An Important Chapter in Oral Sepsis" in which some statements are made that possibly might be misleading to some medical men who are not educated as to the importance of oral hygiene, and how to obtain the desired results. The article began by stating "An absolutely clean tooth never decays." This is a slogan invented by some misguided dentist, and because of its aptness, has become a popular saying with many writers on oral hygiene. The expression is radically wrong and should be eliminated from our literature for the simple reason, there never was or will be a clean tooth, except possibly for a few hours after prophylactic treatment, hence the statement that "a clean tooth never decays" is misleading.

The question of oral hygiene or oral cleanliness is largely one properly termed mechanical therapeutics. The advantages to be derived from the use of medicinal aid, such as in connection with powders or mouth washes are so slight as to be of no material aid, as any medicines powerful enough to destroy germs, or even to allay their activity, would be out of the question to be used in the mouth. The main benefits from mouth washes or from essential oils or other agents in powders are more on the order of suggestive treatment. Their imaginary benefits as well as the pleasant condition that remains are an incentive to their use. Oral cleanliness can be obtained in only one way. That is mechanically, by using the proper brush and powder in the proper manner, and at frequent and

regular intervals. Any theory that decay can be eliminated by constitutional treatment is far fetched, and has never been proven. Conditions can be improved, the same as changing any pathological conditions of the body improves the general system. The following excerpt from the article in question is incorrect in my opinion and is likely to work harm, as physicians reading it might be led into the error of prescribing such treatment, and depending upon it to rectify conditions:

"It is not the temporary neutralization of these acids which we seek when combating dental caries, but the inhibition and, if possible, the destruction of the acid-producing organisms. Pickerill claims that he has been actually successful in preventing the further process of decay and completely checking the process in its very beginning. In order to prevent the retention of fermentable carbohydrates on and between the teeth and so eliminate or very considerably reduce the carbohydrate factor in the production of caries, starches and sugars should on no account be eaten alone, but should in all cases either be combined with a substance having a distinctly acid taste or should be followed by such substances as have been shown to have an alkaline potential; and the best of these undoubtedly are the natural organic acids found in fruits and vegetables. We have placed too much stress on so-called antiseptic tooth-powders and ill-constructed mouth washes. They may have assisted in mouth cleanliness but they have not been preventives of caries. Pickerill has arrested caries even when the tooth-brush has been used only spasmodically. Green stains in children have disappeared under no treatment other than that outlined."

The author is right in saying "we have placed too much stress on so-called antiseptic powders and ill constructed mouth washes," for their use is only an adjunct.

The deplorable condition in which we find the mouths of this generation is to a great extent the fault of the physician. We as dentists as a rule do not see our patients until the average condition is bad. Nearly every child at some stage is visited by a medical man, and while the up-to-date physician does not diagnose all diseases by a casual glance at the tongue, yet custom decrees that this useful appendage be gazed at and if the important custom of examining the surroundings of the oral cavity could be established a multitude of future troubles could be eliminated by the simple advice, "Visit Your Dentist."

The non-observance does not alone to the teeth, but also to the growth of adenoids, with the harmful results from which we are all familiar. Such procedure would also aid in rectifying the deformities of the arch. Thousands of children are seen daily by physicians whose after lives will be marred because a malocclusion of the teeth prevents satisfactory mastication of food. This condition is easily remedied in early age, but it cannot be assisted in mature life.

#### Self-Commitment of the Insane.

The defects in the lunacy laws throughout the country are noted by F. A. Fenning, Washington, D. C. (*J. A. M. A.*, April 13). He pleads for the enacting of laws permitting self-commitment of persons who are consciously disordered in their minds but who would object to the formalities and publicity of the usual legal methods. He quotes from the published laws of Maryland, Rhode Island and Illinois and mentions those that have been enacted in New Jersey and Massachusetts. Of course, the question arises as to the ability of a person needing treatment for mental disease to make a binding agreement, but he brings up the theory of partial insanity as answering this objection. It has been recognized by the highest legal tribunal of the land. Of course, it will be readily understood that hospital authorities could refuse acceptance of such commitment of obviously incompetent persons and it is important to note in connection with this practice of voluntary commitment that there is apparently no record of attempt of such persons to be released by habeas corpus. The advantages of such laws, Fenning thinks, are obvious and the disadvantages in states where such laws do not exist are equally so.

#### STANDARDIZATION OF DISINFECTANTS.

DAVID SOMMERVILLE, B.A., M.D., M.R.C.P., D.P.H.,  
Lecturer in Public Health, University of London, King's College,  
London, England.

It is firmly established that all infectious diseases are caused by germs and that the intensity of a disease is determined by the number and virulence of the particular germ on the one hand and the natural or acquired immunity offered by the human body to this germ on the other. This being so, it follows that the destruction of germs by disinfectants is a matter of the first moment in the prevention and treatment of infectious diseases.

General infections known as septicaemias in which the germs reach and multiply in the blood have been until recently outside the pale of disinfection because no disinfectant was known that could be introduced into the circulation in sufficient quantity with safety to the patient. The new work of Ehrlich—synthetic chemo-therapy—has made it possible to pursue and kill spirochaetes in the blood. A brilliant future is opened up for this form of disinfection.

The almost infinite powers of self multiplication of micro-organisms makes it possible for a microscopically small quantity of pathogenic organic matter to produce an unlimited amount of disease and death.

With time and the extension of experiment the list of infectious diseases that can actually be traced to specific micro-organisms has largely grown and no one doubts that it is only due to our imperfect methods of investigation that the list does not include all. It may also well be that some so-called constitutional diseases hitherto unsuspected of infective origin shall ultimately find a place in the same list. Many kinds of micro-organisms are permanent residents with us, ready to become dangerous at any time that the health falls below normal. Haeckel's "Division of Labor in Nature" has highly specialized the various cells of the human organism at the expense of general capabilities, and the advantages of these highly specialized cells carry with them serious responsibilities. With high specialization has come increased delicacy.

Pathogenic micro-organisms produce their deadly effects through the chemical substances they secrete. These toxins call out the production of neutralizing agents—antitoxins. Granted that the particular infection is not too intense and the body normally healthy for the most part, recovery ensues.

Much attention has been directed during the past 15 years to the determination of the mechanism of immunity and much valuable information has arisen therefrom. In experimental medicine as in most departments of human activity discoveries in a particular field attract enthusiastic workers to that field to the detriment and desertion of other fields of inquiry. So whilst the majority of researchers have been engaged in recent years in the field of immunity, comparatively few have worked at the problem of disinfection. When Pasteur had shown the world that infectious diseases were caused by microbes and Lister had applied Pasteur's doctrines to surgery, attention was focused on the disinfectant action of certain coal tar products, and phenol and various homologues began to take a place with such metallic salts as mercuric chloride, the permanganates, etc. Later it was found that the cresols and certain phenolic compounds were more efficient disinfectants than phenols, and that emulsions of these bodies were more efficient than solutions. As long ago as 1875 attempts were made at standardizing disinfectants and Baxter then showed that 0.0008 per cent. chlorine and 1 per cent. carbolic acid acted as antiseptics. He investigated septic peritonitis and vaccine lymph, conditions in which micro-organisms are associated with large quantities of organic matter. In 1881 Koch and Heuppe worked out methods for estimating the germicidal values of different disinfectants and in the same year the former published his thread method. Fränkel and Behring modified Koch's method by transferring the silk threads impregnated

with anthrax spores to liquid bouillon instead of solid media. Krönig and Paul in 1897 introduced their garnet method and compared the action of disinfectants on bacteria to a chemical reaction between the disinfectant and the bacterial protoplasm. They considered time of contact, temperature, concentration of disinfectant, dissociation of metallic salts and metallic ions engaged factors of importance, but they erroneously assumed that all bacteria of the same species possess the same degree of resistance to disinfectants.

Rideal and Walker in 1903 brought forward their standardized drop method.

In 1909 the Lancet Commissioners published their modification of the R-W method and added to the bacteriological enquiry a useful chemical investigation. I have pointed out elsewhere that the chemical examination can be considerably shortened without loss of accuracy in the result.

In all these researches it is necessary to use naked bacteria and cultures of uniform resistance. The physical state of the disinfectant is often as closely related to the germicidal action as the chemical composition.

It is possible to acclimatize bacteria to disinfectants by growing them at first in very weak solutions and then gradually increasing the strength of the solution from time to time. The bacteria are at first stimulated by the weak disinfectant. Salicylic acid, hydrofluoric acid and other antiseptics have been thus used to stimulate the growth of yeasts.

The academic work of Krönig and Paul, and others, in attempting to establish unimolecular chemical reactions between bacteria and metallic salts, phenol, etc., in solution, gives us no assistance in answering the question: In what quantity and in what manner shall a disinfectant be added to, say, a mass of typhoid stools in order to obtain sterilization? In addition to the homogeneous chemical reactions of the first, second, or higher orders which take place here, various side reactions, opposing reactions, consecutive reactions, and heterogeneous reactions occur in which, if it were possible to establish a differential equation, it would be absolutely impossible to integrate such equation. That can only be done by a series of tests laboriously carried out in which the conditions in practice—bacteriological and chemical—are represented as closely as may be in the laboratory.

The Rideal-Walker and Lancet methods have recently been criticized by J. F. Anderson and T. B. McClintic, of the United States Public Health Service, who came to the conclusion apparently that neither is as good as it might be.

After pointing out the modifications of the Lancet on the R-W method, viz., increased number of dilutions (sometimes interval), extension of the time intervals from 15 to 30 minutes, interval, extension of the time intervals from 15 to 20 minutes, use of *B. coli* and MacConkey's bile salt media for *B. typhosus*, increased amount of mixture of culture and disinfectant transferred to the subculture tubes, and the method of determining the co-efficient, they remark it is well known that there is a greater variability in the different strains of *B. coli* than in the various strains of *B. typhosus*, and therefore there will be less variation in the organism used in the different laboratories if *B. typhosus* be employed, that bile salt media have a greater restraining influence on attenuated organisms of the typhoid-colon group such as are found after exposure to the action of disinfectants than is the case with extract broth of the reaction +1.5, that in the Lancet method there seems to be no rule as to the rate of decrease in strengths of dilutions of disinfectants to be tested, that the lengthening of the time for the performance of the test to 30 minutes has no particular advantage, and that the special apparatus interferes to some extent with the general employment of the method.

They then state their objections to the R-W test, and in justice to the authors of this test I should like to say that in my opinion, as in that of many workers in England with whom I have discussed the question, Anderson and McClintic's criti-

cism is most unfair and wholly misleading. It is difficult to believe that they reached the conclusions which they published before familiarizing themselves with the literature of the subject, yet by no other hypothesis can their findings be explained away.

"The great objection to the method," to quote from their original paper, "is the latitude allowed in determining the co-efficient." Three tables are then set out as typical examples of R-W tables, not one of which would be recognized as such by anyone familiar with the work. Two dilutions of the phenol control appear in each of these tables instead of one as called for in the R-W test, and ratios are obtained by comparing the action of postulant and control at 2½, 10 and 15 minutes, although the authors have repeatedly stated that ratios should be taken at 5 minutes only. Equally misleading is the objection to the drop, which is described as too indefinite, although for years it has been standardized at 0.1 c.c., as is also the criticism of the temperature at which the test is conducted, the difference in results obtained within a variation of 2° being negligible.

The Hygienic Institute test which was put forward by Anderson and McClintic, after disposing of the R-W and Lancet tests, may be described as the former, with the addition of two or three features taken from the latter. The addition of these Lancet features, in my opinion, marks a distinctly retrograde step.

It cannot be too emphatically asserted that any variations in results experienced by two workers observing the conditions laid down by Rideal and Walker arise from failure in some respect on the part of the worker, and not out of the method which has for several years been adopted officially by the leading State and Public Health Departments of Great Britain and the British Colonies.

#### Unclean Mouth.

M. H. Fletcher claims that unclean mouths are probably the indirect cause of more disease than any other source. Alveolitis usually starts from local irritants at the necks of the teeth, and of these tartar is the most frequent and constant irritant. The resistance of the tissues may for years prevent malignant infection of the lesions, but the ultimate end, if the patient lives long enough, is the loss of the tooth. Tartar cannot be gotten rid of by the tooth, and it causes swelling and inflammation of the gum and pockets into which it penetrates, causing the gum tissue to recede and give rise to a suppuration of the gum and the bony socket of the tooth. When pus becomes manifest it produces pyorrhea alveolaris. The pockets must be sterilized or the tooth removed before it will disappear. The usual result is considerable destruction of bone, sometimes a considerable portion of the jaw has to be removed in advanced cases or necrotic alveolitis. There is probably no disease so prevalent as alveolitis and no one so amenable to treatment. Prevention is a matter of keeping the mouth clean and the teeth free from tartar. The whole of the operative treatment consists of removing the tartar or other irritant and sterilization, and the patients can learn to keep their mouths clean and carry on the preventive treatment themselves.

Hoffmann explains the disappearance of the symptoms of Graves' disease after simple cauterization of the mucous membrane of the nose, even in the absence of obstructing and irritating factors, by a combination or summation of the irritations acting on a labile vaso-motor center, which, contracting, acts on the smooth musculature, including the extra-vascular smooth muscles, especially of the corresponding half of the head.

In the digits the dissection for a foreign body should be confined, if possible, to a quadrant bounded by the tendons in the median line and the vessels and nerve on each side.—(*Amer. Jour. Surg.*)

## Current Orientation

### THE TYPHOID CARRIER.

The typhoid carrier seems to be as deadly as the typhoid fly. "Typhoid Mary," whose history as a disease distributor is familiar to all physicians, has many prototypes. The latest was discovered in Moorestown, N. J., in August by Dr. Frank G. Stroud, health inspector of the township of Chester. About 40 cases in Moorestown and surrounding villages were traced to one Ellis Kensler, manager of the Roberts dairy farm. Despite the fact that this farm had always been a model from a sanitary standpoint, it was noticed that every person affected with typhoid drank milk from the Roberts dairy. Blood tests were made of all employees and the source was thus discovered. The situation in Moorestown was so serious that Dr. Stroud and the Association of Moorestown Physicians issued a circular to the public which said in part:

"An employe on the Roberts farm supplying Moore & Haines' milk route, has been found by the blood test to have had, a short time ago, a typhoid infection so mild as not to interfere with his working or to make him feel badly, except for three days after he had been ditching with bare feet in water. With this exception, during the whole time of his infection, he felt as well as ever in his life, worked hard and looked well. He continued his usual work of caring for the milk, washing the cans, etc., and was thus the innocent means of conveying the infection to others on the farm and to the milk supplied to our town. All of the early cases, both on the farm and in the town, developed practically at the same time, so that no case has come from any recognized case at the farm.

"From these facts it will be seen that the spread of the infection was not caused by any negligence of Moore & Haines, nor by any negligence at the Roberts dairy, nor by any cause which could have been foreseen or avoided. The dairy was found by the inspectors to be in a thoroughly sanitary condition, the water used for washing contained no colon bacilli, and the milk utensils were sterilized by live steam—rather unusual for a country dairy. Moore & Haines' plant was also found to be in satisfactory condition.

"To cut off absolutely any spreading of the poison by milk, Moore & Haines have been ordered by the State Board of Health to discontinue distribution of milk from their present plant, and until the danger is over and the order is revoked they will handle only bottled milk from an entirely different source and pasteurized."

Dr. Stroud advises the MEDICAL TIMES that the epidemic is under control. Two of Kensler's children and four residents on the farm have been ill of the disease.

Dr. R. T. Hinton, superintendent of the Elgin State Hospital, Illinois, reports a mild typhoid epidemic in his institution in the latter part of 1911. Seven cases developed and all ate in the general dining room for females. Two women cut the bread and came in contact with much of the other cooked and uncooked food. It was learned that both had suffered from typhoid, one three years and the other two years before. A bacteriological examination of the feces and urine of these women resulted in the isolation of typhoid bacilli in pure culture in the urine of the woman who had recovered from typhoid three years before. She had direct charge of the bread cutting. She was transferred to another department where she did not handle uncooked food, and no further cases developed in the hospital.

Report No. 4, Bulletin No. 78, of the Public Health Service contains a report by Surgeons Lumsden and Anderson. They examined the feces and urine of 307 people and found that 2.8 per cent. were typhoid carriers. In commenting on this subject the *American Practitioner* says:

"It seems that typhoid carriers who have become so merely by association with those suffering from the disease are fairly common among nurses and orderlies. Such individuals may continue to excrete typhoid bacilli in the stools and urine for years. Their own tolerance to the infection is probably due either to natural immunity or to partial immunity from an earlier unrecognized mild typhoid infection. In 1899 Houston reported the first cases of a contact carrier, while Park has estimated that probably one in every 500 adults, who has never knowingly

had typhoid fever, is a typhoid bacilli carrier. As for secondary carriers, it is stated that about 4 per cent. of all persons who have to their knowledge had typhoid fever become chronic carriers of the disease for months and years. They have secured from the attack only a partial immunity in the sense that while certain protective immune bodies, such as the opsonins and stimulins, are augmented by the attack, others, as the bactericidins and bacteriolysins, are not augmented to the point of destruction. Their immunity, in fact, is phagocytic, not bactericidal or bacteriolytic. It has been shown that the majority of carriers experience little discomfort from the presence of the active germs of disease in their system."

Stone, of Toledo, writing in the *American Journal of the Medical Sciences*, believes that the gall bladder plays an important part in harboring bacilli of typhoid. In this he is in accord with Gould and Qualls (*J. A. M. A.*, February 24th, 1912), who say that the bacillus typhosus finds a lodging place in the gall bladder and is excreted in the feces. They may remain latent for years in the gall bladder or in the alimentary or urinary tracts. Forster and Ledingham concur in this belief.

Stone concludes his article with these findings:

1. Not only should individuals who are typhoid carriers receive appropriate treatment, but all persons, including physicians and nurses, whose duties call for the attendance on and care of typhoid cases, should receive immunizing treatment.
2. Such treatment has been found efficient and productive of little discomfort.
3. When typhoid bacilli have produced clinical or bacteriological evidence of cholecystitis, it is doubtful whether vaccine treatment will of itself be of avail, surgical drainage of the viscus then being indicated; on the other hand, persons showing evidence of interstitial or urinary tract perpetuation of the bacilli, without cholecystitis, during convalescence from the disease or subsequently, should be given the opportunity to receive appropriate vaccine treatment.
4. Chronic carriers who have been treated unsuccessfully by vaccine should be under the control of the local board of health and furnished employment, if necessary, which will not require the handling of food products."

In August, 1911, Meakins (*Canadian Med. Ass'n Jour.*) advocated that all cases of typhoid in hospitals should be examined bacteriologically and kept in the institution under treatment with homologous vaccines until the excreta showed no typhoid bacilli.

Acting on this thought, Brannan of New York (*Am. Jour. Med. Sci.*) had the feces and urine of 119 typhoid convalescents in Bellevue and allied hospitals examined. Of these 15, or 12.6 per cent., had typhoid bacilli in feces or urine, or both. An average of two examinations was made in each case. Forty-eight cases were also examined during the active stage, with a positive result in 10, or in 20.83 per cent. From these figures it appears that about one case in five gave positive findings during the active stage of the disease, but only one in eight cases by the time they had arrived at convalescence. Some sanitarians advance the claim that typhoid carriers convey the infection by the mouth as well as by the excreta, and this thought is advanced as another reason for the abolishment of the time-dishonored common drinking cup.

How shall we rid ourselves of the dangers of infection from typhoid carriers?

The question is answered in a way by Petruschky, city physician and director of the hygienic institute of Danzig (*Deutsch. Med. Woch.*, July 11, 1912). He sterilizes his typhoid patients in a manner similar to that employed following diphtheria. He keeps diphtheria patients confined until the naso-pharyngeal passages are free from diphtheric bacilli.

When the bacilli are difficult of eradication, so that the patients may become carriers, he kills the bacteria by two or three injections of a suspension of the patient's own bacilli killed by fumes of chloroform applied for several hours. In eight cases described the desired effect was realized in every instance; in the recent cases only two or three injections were necessary and the patients were permanently sterilized. But in one chronic carrier, a child of nine, who had no history of diphtheria but had been subject to colds, coughs and pains in the chest for years, diphtheria bacilli were found on

and in the tonsils, and necrotic plugs expelled from the tonsils invariably contained bacilli. The case proved most obstinate. He gave 21 injections, and 14 months after the initial injection no traces of diphtheria bacilli could be found in the child. She had been suspected of tuberculosis, but no tubercle bacilli were found at any time. In another chronic carrier, a man of 23, four months and eight injections were required before the diphtheria bacilli disappeared from throat and nose. He had no history of diphtheria and applied for examination on account of symptoms suggesting tuberculosis. Petruschky in a more recent case has applied the bacillus suspension by rubbing it into the skin, suspended in glycerin or in the form of a salve, and in six weeks the bacilli had disappeared. This patient was a frail woman of 31 with no history of diphtheria, but with symptoms suggesting tuberculosis; the tuberculin reaction was positive, but there were no tubercle bacilli or lung findings. A test injection of a neutral fluid proved so painful that this method was abandoned and two drops of the glycerin suspension were rubbed into the forearm at a different point on alternate days. By the sixth week no further diphtheria bacilli could be discovered and the patient gained 10 pounds in three months. He advocates applying this simple inunction method for active immunization of every child whose bacilli linger in the throat after convalescence and two weeks of the ordinary gargles and other measures. The parents would seldom object to this inunction method. For 10 years Petruschky has been applying this active immunization method in prophylaxis when conditions seemed to compel special preventive measures.

In the endeavor to sterilize typhoid carriers various methods of treatment have been tried, such as the use of lactic acid bacilli, acidifying the urine, the administration of antiseptics, the use of the x-rays, and the employment of vaccine. The surgeons of the English army report the following results from the use of these five different means of treatment: (1) Lactic acid bacilli cause only a temporary disappearance of the typhoid bacilli. (2) Acidifying the urine fails to cure typhoid bacilluria. (3) The administration of antiseptics invariably brings about a decided diminution in the number of bacilli, both in fecal and in urinary carriers. This effect is much more marked when the maximum contact of the antiseptics with the bacilli is obtained by combining the treatment with low diet and aperients in the case of "fecal," and with diuretics in the case of "urinary" carriers. (4) The use of x-rays in the case of gall-bladder infection seems to have definite beneficial results. (5) Vaccines, like the lactic acid bacilli, cause only temporary disappearance of typhoid bacilli. It is suggested that the treatment by vaccines might have a better chance of success if combined with diuretics in the case of "urinary" carriers, and with x-ray treatment in gall-bladder cases. Sir Almroth Wright has pointed out that a vaccine is more likely to be efficient when the local conditions are so altered as to permit the fullest possible contact between the bacteriolytic products in the blood and the bacteria involved. Other observers have had better results with vaccines than the English army surgeons.

The clinical statistics underestimate the frequency of syphilis of the liver. The Wassermann reaction will increase the number of cases. The symptom-complex of syphilis of the liver is not pathognomic, as it simulates almost every hepatic disease; occasionally it simulates febrile diseases. Whenever the diagnosis is uncertain, resort should be had to the therapeutic test as well as to the Wassermann reaction. Frequently mixed treatment has a striking effect on lues of the liver, regardless of the time it has existed.

If one end of a needle projects superficially, by squeezing the muscles in the proper direction, from beneath its deeper end, it can often be driven through the skin and extracted without incision.—(*Amer. Jour. Surg.*)

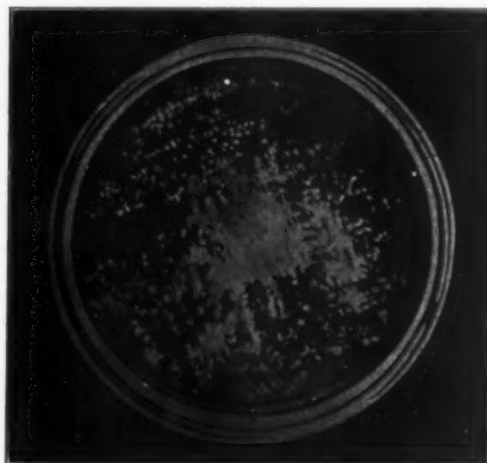
## DISEASE GERMS AND INEFFICIENCY.

In opening an informal discussion at the recent joint conference, at Atlantic City, of the American Medical Association and the American Association for Labor Legislation, J. T. Ainslie Walker, F. R. S. M., F. C. S., dealt with the question of dust in its relation to efficiency.

"Dust is the enemy of the workman," said Mr. Walker, quoting Sir Thomas Oliver, medical adviser on dangerous trades to the English Home Office, in his "Diseases of Occupation." "Much ill health and most of the industrial diseases are caused by the inhalation of dust or by the workpeople swallowing it along with their food. Dust, if insoluble, may inflict injury mechanically; if soluble, it may cause poisoning, as in plumbism. In the various industries dust of all kinds is met with. It is inorganic and organic. The dust given off during the chiselling of stone, the grinding of steel and the packing of pigments is inorganic, while that raised during the manufacture of cotton, silk and jute is organic. Dusts that are harmful might be spoken of as mechanical, irritative, chemical and toxic, or caustic."

In a recent address at Detroit, Congressman William C. Redfield, of New York, said: "We all believe in clean shops, but do we think enough of the human element to be careful to avoid sweeping when the men are about, because of the well known fact that dust carries all manner of disease germs, which men breathe?"

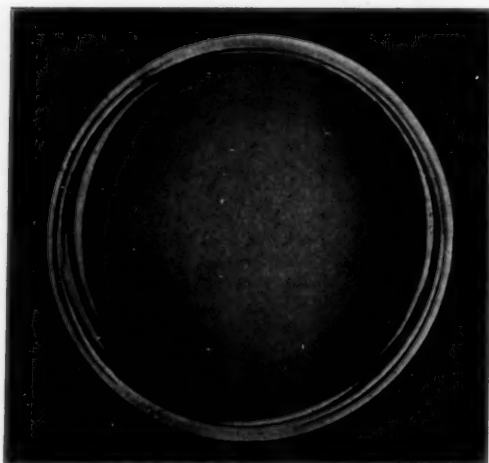
It is high time that this question of disease germs in places where millions of men and women spend their working hours should receive some attention. Everybody knows that the germs are there, but no one appears to think it worth while to destroy them.



Infected Plate.

A year or two ago Lister, writing in the *British Journal of Tuberculosis*, pointed out that the mortality from consumption among printers was 60 per cent. above the average. The attention of the Federation of Master Printers and Allied Trades having been called to this fact, and to the part played by dust in the dissemination of tubercle bacilli, they decided to investigate the question at first hand, and proceeded in the following manner:

At the close of the day's work a certain area of floor space in one of the largest printing establishments in London was divided by a chalk line, and both halves were swabbed with water containing a strong culture of *B. prodigiosus* (a bacillus much used by bacteriologists in experimental work by reason of its distinctive coloring). One half of the space was thoroughly sprinkled with a standardized disinfectant solution equivalent to 1 in 20 pure carbolic, by means of a rosehead sprinkling can, and



Disinfected Plate.

so left until the following morning; the other half was sprinkled with water only. Swabs were then taken from both the disinfected and non-disinfected spaces, and submitted to Prof. Klein, the local Government Board bacteriologist, for examination. He reported as follows: "With each of these (swabs) I thoroughly smeared the surface of agar, solidified in a plate dish, and placed them in an incubator at 20 degrees C. The result is as follows:

1. Infected plate; crowds of colonies of bacteria, no moulds.
2. Disinfected plate; no colonies of bacteria, but one colony of moulds, but this in view of the result of plate 1, seems to have got in by accident.

It follows from this that disinfection has been perfectly satisfactory." (*Medical Officer*, June 4th, 1910.)

The unsanitary condition of places of occupation is injurious both to employer and employee; the latter suffers in health, the former in pocket. A man impaired in health through the inhalation of germ-laden dust cannot put forth his maximum efficiency; but the employer still pays his full wages, and suffers the loss himself. If we assume that the efficiency of workers so affected be reduced by ten per cent. (a conservative estimate), for every hundred hands employed, the loss to the employer is represented by the labor of ten men. In other words, the employer pays the full wages of ten men for work which they have not performed.

It would surely be more economical and more humane to remove the cause of that impaired efficiency by the destruction of the causal agents—the germs of disease on the workshop floors. The experiment described above shows that this can be done in a very simple manner, and it is to be hoped that this procedure may soon be adopted as a routine practice in the cleaning of all work shops, factories and offices.

#### Unilateral Cervical Adenitis.

H. F. Day, Boston (*J. A. M. A.*, June 8), reports a case of unilateral tuberculous infection of the tonsils with extreme reaction in the glands of the neck, which entirely subsided after tonsillectomy without any change in mode of living of the patient or subsequent treatment by tuberculin. The diagnosis of tuberculosis was made after the examination of the extirpated tonsils, and the enlarged glands of the right side of the neck, which extended from the parotid to beneath the clavicle, gradually subsided. One year after the operation the throat was clear, and only one or two minute glands in the neck could be palpated. The lungs were reported as normal and were apparently not involved.

If the administration of thyroid extract to a patient suspected of exophthalmic goiter increases the symptoms the diagnosis is more probable.—(*American Journal of Surgery*.)

## Pediatrics

### Errors in Children's Diet.

Roger H. Dennett, of New York City (*Archives of Pediatrics*, July, 1912), discusses some common errors in diet after the first year. These errors account for half of the children who come to the physician for treatment between the ages of one and five. Too frequent feeding during the second year is one of the commonest errors. Five or six meals a day, as recommended by so many text-books, are too many. They cause digestive disturbances. Appetite is lost and nutrition suffers. Three meals are enough. A 10 P. M. bottle should be given until the eighteenth month. Another grave mistake is the omission of vegetables during the first half of the second year. Potatoes and one other vegetable should be given once a day, beginning soon after the end of the first year. They must be thoroughly cooked and mashed. Spinach, green peas, string beans, carrots, beets and asparagus tips may be employed. Theoretically the child ought not to become anemic, but practically he often does, unless vegetables are used. Perhaps the next most frequent error is that of allowing too much milk during this period. One milk meal a day is enough, at least after eighteen months of age. Too much milk has the same effect as too frequent feedings. It is also the most frequent of all the causes of constipation. Whenever the children become thirsty during the day they are allowed to drink milk instead of water, which is ruinous to their digestion. Again, the use of cereals is almost invariably overdone at this age. One cereal meal a day is enough. After the teeth have come solid food must be chewed, else the teeth are not well formed and decay. Bread should be dried hard in the oven and chewed without liquids. The habit of eating without chewing is formed unless these principles are followed. Mushy foods encourage this, of course. The American habit of rapid eating is formed in this way, in all probability, and the early decay of the teeth accounted for in large measure. Give proteids when the milk is reduced, e. g., eggs; after the eighteenth month, if the teeth are all cut, give meat once a day beside the egg. Children who do not get the proteid in the diet are very apt to be large eaters, and consequently to overeat. Oftentimes this overeating is of foods which are more difficult to digest than the meat. Soup is an inconsistency, having little nourishment and containing only extractives of meat. Fruits are a very important element in the diet, and Dennett believes in using uncooked fruits. Scrape or mash them until the end of the second year. The use of fruits cooked with sugar is pernicious. Sugar is an article of food which probably causes more digestive disturbances than any other one thing. Its high caloric value takes away the child's appetite for other foods which are essential. Desserts may be given at the noon meal after the second year—rice pudding, blanc-mange, gelatine puddings, farina, soft and hard custards, sponge cake or lady fingers, angel cake or sweetened crackers. Candy should not be allowed at all, and sugar should not be given with cereals or fruits. Children who don't want to eat when solid food is begun either are being given too much milk or have not been taught spoon feeding early enough. They should be taught to take water, milk or small amounts of cereal from the spoon from the ninth or tenth month.

### Pneumococcal Peritonitis in Children.

This condition, says Barling in *The Practitioner*, is sufficiently frequent to make it a factor of real importance in the differential diagnosis of the acute abdomen in the child, and inasmuch as the onset may anticipate or be independent of any pulmonary lesion the problem of diagnosis is still further complicated.

There are several possible routes by means of which the pneumococcus may reach the peritoneal cavity. Through the

vagina and Fallopian tubes in the female, from the intestine itself, from the vascular system as a general septicaemia, or finally, seeing the large number of cases associated with pulmonary lesions and empyema, by direct transmission through the lymphatics of the diaphragm.

The theory that infection comes from the gastro-intestinal tract has received much support, and Bowen and Annand consider that this is the route infection takes in the cases in which the peritoneum only is affected, but it does not satisfactorily explain many of the cases, nor are many of the observed facts in keeping with this theory. It is true that pneumococci may be found in healthy bowel and occasionally give rise to a pneumococcal enteritis or colitis, also injury or necrosis of the mucous membrane may allow the organisms to pass through the wall and thus infect the peritoneal surface. It is, however, quite exceptional to find any constant macroscopic lesion of the mucous membrane of the stomach or intestine—any local invasion of the bowel wall by the pneumococcus would cause enlargement of the mesenteric lymph glands; this is seldom found in pneumococcal peritonitis, but the bronchial glands are always enlarged. The local invasion is manifested by a widespread peritonitis, showing that the germ enters the peritoneal cavity by some other route. These facts seem to suggest the only theory that will permit us to regard the infection as a septicemic manifestation.

In a certain proportion of cases the peritoneum only is attacked, and no lesion is present in the lungs or elsewhere. The organism in these cases would appear to have entered the circulation direct from some of those sites where it is normally found, a temporary increase of virulence or of lowered resistance on the part of the patient having permitted this invasion to take place even without any macroscopic lesion being present. The early occurrence of diarrhoea in these cases has been thought to point to a primary pneumococcal enteritis with a secondary infection of the peritoneum, but a close examination of these cases will show that pain is usually the first symptom complained of. This indicates an inflammation of the peritoneal surface of the bowel; the diarrhoea comes on a few hours later as all the coats become involved in the inflammatory process, and so would appear to be a result of the peritoneal infection rather than a causative factor.

Three clinical types may be recognized. First, the acute cases showing early abdominal features, but no pulmonary lesions.

Second, the cases which simultaneously develop peritonitis and pneumonia.

Third, those cases in which the septicaemia is of a more chronic type. Pneumonia has been present some time. The patient has lost ground and pneumococcal pus has appeared in the pleural cavity and the peritoneum. An infection of both pleural sacs may develop, followed by peritonitis and the patient finally succumbs to the infection.

Usually the first symptom to draw attention to the abdomen is pain, severe and general over the abdomen; it may persist for several days, occasionally becoming localized to the umbilicus or right iliac fossa, and thus closely simulating appendicitis. The pain is soon followed by vomiting and diarrhoea; not infrequently the initial diarrhoea, after lasting for one or two days, ceases and is followed by constipation. These three symptoms are very constant in their occurrence. With the onset of the pain the abdomen rapidly becomes generally tender, immobile, and rigid; later on these signs tend to become most marked in the lower part of the abdomen, and often the right iliac fossa is especially affected. A large quantity of fluid is poured out from the inflamed peritoneal surfaces and areas of dulness may be present, especially in the right or left flank, whilst the collection which settles in the pelvis gives a feeling of fulness when a rectal examination is made. The abdomen soon becomes distended, partly owing to the effusion of fluid and partly due to parietic distension of the bowel which suc-

ceeds the initial diarrhoea. Fever is present from the commencement and the temperature may be as high as 103 degrees or 104 degrees F. When the lungs are also affected rapid respiration, active alae nasi, and the usual local signs of a bronchopneumonia or a true lobar pneumonia become manifest. After a few days wasting is rapid, and the sunken eyes and pinched face indicate the gravity of the condition. Leucocytosis is generally absent on the first day or two; in the most acute cases no increase in leucocytes occurs throughout the illness, all resistance seems paralyzed, and the patient dies without reacting in this manner. If the infection is not overwhelming a rise in the leucocytes begins on or about the third day, and may continue until a very high leucocytosis of 30,000 or 40,000 is reached. Herpes on the lips occurs in a few cases, and suggests a close examination of the chest when present with an acute abdomen. A petechial rash may appear on the body or limbs in the late stages of the severest type of case.

In the cases that pass on to the subacute stage the effusion localizes itself to one part of the abdomen which remains tender and resistant, the patient wastes rapidly, diarrhoea persists with occasional vomiting, and a high leucocytosis is present. If such a case points at the umbilicus this usually becomes prominent, red, and tender, and eventually the skin gives way over it, with discharge of the contents of the abscess cavity.

The prognosis at best is grave and the mortality is high.

Surgical treatment is essential, as having a septicemic condition from the first, early drainage is necessary, both in the pleural and peritoneal cavities.

The impossibility of distinguishing some of the cases from an acute appendicitis increases, if possible, the necessity for early incision; a large proportion of the cases operated on are opened in the first place in the right iliac fossa, in the expectation of finding the appendix as the cause of the symptoms. The characteristic greenish-yellow odorless pus is quite distinctive, however, and the appendix is free from any lesion except that it participates in the inflammation of all the serous surfaces. Incisions should be made in both flanks and in the middle line above the pubes, tubes being placed in the pelvis and loins. No wiping or irrigation is done; such procedures remove not only the infecting organisms but sweep away all the defensive powers of the peritoneum, increase absorption, and prolong the operation unnecessarily. The operation should be done as speedily as possible and the patient put back to bed in the Fowler position. Saline solution should be given freely, by the rectum by continuous proctoclysis if possible, or failing this, by enemata, or by the intravenous method. Nothing should be given by the mouth except a little water, and all aperients should be withheld till some days after operation.

The treatment of pneumococcal infections by vaccines has not met with that success which at first sight might be expected from such methods. The reasons for failure are twofold. In the first place, the infection is sometimes so overwhelming that all resistance of the patient is paralyzed and the patient succumbs to a profound septicaemia. In the second place, there are many strains of pneumococcus, and immunizing against one of these may not protect against others, so that the use of "stock" vaccines is most unsatisfactory, while the production of an autogenous vaccine takes up much valuable time. It is thought that eventually vaccine therapy will offer real aid to pneumococcal peritonitis.

#### Tubercular Prognosis in Infants.

With the advance in our knowledge of tuberculosis, Hahn, in *Monat. f. Kind.*, says important differences have been found between the tuberculosis of children and that of adults. This has been made possible by the newer methods of tuberculin diagnosis and by animal experimentation. The text books, however, claim that tuberculosis in infancy has practically a fatal prognosis.

The author bases his paper on 69 cases of tuberculosis which have come under his observation, in young infants. Of these, 48 died, or a mortality of 69 per cent. Of 20 under six months, 15 died. Of 26 from 6 to 12 months, 19 died, making a mortality of 77 per cent. in the first year. Of 23 cases, from 12 to 20 months, 14, or 60 per cent., died. The author found no appreciable differences in the mortality of those nourished on breast milk from those artificially fed. An inherited disposition did not seem to exert much influence but the post partum infection was a most important factor. This was shown through the bad surroundings and the presence of one or more tuberculous individuals in the household.

The prognosis depends on the age of the child and is worse but by no means hopeless in the first year of life. It also depends on the clinical course and the localization of the infection. Children who have no temperature and whose body weight increases and in whom the tuberculosis is limited to the lymph glands generally recover. This also applies in the cases in which the disease is confined to the eyes, bones, and joints.

The wide spread tuberculosis, involving the lungs and the internal organs, is generally fatal. The prognosis among illegitimate children is a great deal worse than among legitimate, as they do not seem able to resist the infection.

#### Albumin in Urine of Normal Children.

Hamill and Blackfan (*Am. Journal of Diseases of Children*) examined the urine of 124 normal children whose ages were between 18 months and 14 years. The specimens were examined at different hours of the day, and for 24 hours for specific gravity, color reaction, albumin, sugar, acetone, diacetic acid, indican, phenol and urobilinogen. They found that at some period of the test albumin was present in the urine of 110 out of the 124 children.

The authors summarize their findings as follows:

1. There has been no relationship between the specific gravity and the form or amount of albumin.
2. The reaction has had no influence on the production of albumin.
3. Sugar, acetone, and diacetic acid were never found. They may, therefore, be considered as having no bearing on the production of albumin.
4. Indican, phenol, and urobilinogen when present were usually associated with albumin, but albumin was sometimes absent when they were all present, and the amount was never greater when associated with them than it was in the cases in which they were absent.
5. Crystals, when present in amounts, such as are occasionally found in normal children, are in no way responsible for the associated albumin.
6. The mild disturbances of the intestinal digestion, as shown by the examination of the stools, were not sufficient to account for the occurrence of albumin.
7. The blood-pressure was within the normal range in all cases and, therefore, did not influence the albumin output.
8. The albumin elimination was the same on mixed and exclusive milk diets.
9. No children were found in whom the albumin excretion corresponded to the requirements for postural or orthostatic albuminuria, a rather surprising result in view of the frequency with which this condition is supposed to occur.
10. Thirty-two and one-half per cent. of the children showed occasional hyaline casts and cylindroids in their urines. Their "occasional presence" is not considered indicative of a lesion of the kidneys, but rather as suggesting a temporary over-taxation of the kidneys, resulting from variations in the habits of life of the individuals which are too slight to be recognized.
11. Eighty-eight and seven-tenths per cent. of the urines of these 124 children showed albumin, 27.4 per cent. showing serum-albumin alone, and in combination; and 85.4 per cent.

an albuminous body precipitated by acetic acid in the cold. These two albumins were nearly always present in very slight traces, occasionally in slight traces and rarely in traces.

They do not think the presence of the serum-albumin indicates diseased kidneys.

#### Observations on Some Clinical Features of Scarlatina.

Henry W. Berg, of New York (*Med. Rec.*, May 11, 1912), classifies the different types of the disease as *S. simplex* (mild and severe), severe toxic *S.* (non-hemorrhagic and hemorrhagic), and *S.* with mixed infections, the so-called septic or surgical *S.* These phenomena depend upon the ability of the emunctories to get rid of, and the protective forces to neutralize, the toxic materials manufactured by the pathogenetic forces. This classification is not arbitrary but relies upon essential clinical and pathogenetic differences and is therefore convincing and useful in the logical consideration of the disease.

Two useful points are made regarding the rash. The toxic scarlatiniform erythemas *lack uniformity*. The eruption of scarlatina is scarlatiniform throughout, while the toxic erythemas have here and there urticarial and morbilliform patches. In the stage of desquamation dermatitis exfoliativa and the pseudo-desquamation of some types of eczema may be excluded by the fact that in scarlatina the underlying skin is soft, velvety, pink and perfect in texture. In the other conditions it is rough and hard and sometimes covered with a moist exudation.

Painful enlargement of the glands underneath the sternocleidomastoids, giving rise to pain on motion, leads to an involuntary rigidity sometimes which simulates the symptoms of meningitis, which may or may not be present. Then there may be brain symptoms which while simulating meningitis are really due to cellulitis in the deeper planes of the neck, compressing the jugular and other veins, the brain symptoms being due to the passive cerebral hyperemia.

The temperature curve is characteristic in uncomplicated cases. After the sudden rise at the beginning the height of the fastigium is maintained during five days, when lysis sets in, which process consumes from three to ten days. The day when lysis begins can safely be taken as the fifth or sixth day, and if there is an extensive rise or fall during the fastigium or during the lytical resolution an intercurrent or complicating condition should be searched for and is not to be looked upon as an essential part of the scarlatinal pyrexia.

Nephritis does not occur so often in hospital practice as in the course of private work. This is because the patients are kept in bed in the hospital until desquamation is almost complete more often than in private practice. Moreover, the diet is better controlled, milk being chiefly employed. But albumin in the urine does not necessarily mean nephritis. Most cases occur during desquamation, or just preceding it. It very seldom begins in the post-desquamative stage. In severe types the urine rapidly diminishes in amount and myocarditis with dropsy and dyspnea ensue. There is pyrexia and sometimes anuria. In the beginning these cases are glomerular; they may develop the lesions of acute parenchymatous nephritis. If recovery ensues the resolution is almost critical, like a lobar pneumonia.

#### Thymol for Taenia.

W. Allan (*J. A. M. A.*) recommends the use of thymol for tapeworm. It is cheap and requires no preliminary starvation or purgation and has during the past year been very effectual in his hands. He has removed *Tænia saginata* from three individuals, who were 11, 9 and 5 months of age with no recurrence to date. The thymol was given in the usual way either with or without salts.

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## ICH DIEN.

This good old German motto, "I serve," is coming into its own in these early years of the twentieth century.

The painstaking student of history notes, in passing, how each age emphasizes, garners up the things that make for a better society, a better living through service in action. Ich dien is the mainspring of progress, and the I serve of a few great, self-sacrificing souls that leaven the life of the ages. Emerson was right in saying: "Civilization is but the lengthened shadow of the good and great."

The age of commercialism, a dollar-marked man age, is passing. We are beginning to see the cheapness, the shoddy, the vulgarity of it all. We are discovering the man age; that "the servant of all is the greatest of all;" that service is the greatest asset of society; that service-politics "is the science of government."

Whatever men may think or say of the Progressive convention held at Chicago, this one fact abides, that man has been placed above the dollar-mark in politics; that men and political parties are to be measured, hereafter, by their service to all the people.

The church and the school; the physician and the preacher; the mayor and the councilman; the legislator and the voter must hereafter square their lives by the inexorable law of service, if they are to continue to occupy a place in the ranks of human progress.

Christian conservation must rest upon health conservation. This active Christian service, religion in action, must express itself in physical and civic up-building. "A religion of effortless adoration may be a religion for an angel but never for a man or church leavened by the motto, Ich dien; and if not so leav-

ened, such a man or church is a decadent object on life's progressive highway."

There are two great bodies that are the prime factors in health conservation, if they willed to be so, the body politic and the clergy of America. A union of these two bodies in active sanitation would save millions of lives and billions of dollars. The work of these two prime factors is the creating and maintaining of efficient environments, safeguards against preventable diseases. The only way to do this is to educate and arouse public sentiment, to multiply the number of sanitationists in every political division in the United States.

Ignorance and carelessness are the chief causes of preventable sickness and death. The toll paid by Michigan, annually, for tuberculosis, alone, is \$20,000,000, and this disease is preventable. Ten million dollars toll is exacted for other preventable diseases, making the total \$30,000,000, to say nothing of sorrow, mortgaging and sacrificing the future; the great economic waste.

If we could have one-third of this amount, \$10,000,000, to use in providing good water, good milk, sanitary surroundings for schools, well ventilated school rooms, parks and playgrounds, what an unmeasurable good we could do.

The Titanic disaster caused the loss of 1,635 lives in one day, but 1,780 lives are lost in America every day from preventable diseases. Is it not about time that church and State wake up and unite in a campaign for life against preventable diseases? Every clergyman, every educator in every school, every head of a city or village, every legislator, every father and mother, every editor should become an active sanitarian, for by these we can only hope to create a sentiment for health conservation that spells success. If every one of the factors named should adopt Ich Dien for his motto, we should see a greater meaning read into the life of society.

"Let us then be up and doing  
With a heart for any fate;  
Still achieving, still pursuing  
Learn to labor and to wait."

D. E. MCCLURE.

## THE NECESSITY OF MEDICAL SCHOOL INSPECTION.

We hear occasionally some one decry the value of medical inspection of school children. To such persons we commend the experience of the school authorities in Montreal. Out of 59,000 school children examined by medical inspectors, 27,000 suffered from various complaints, including 1,789 from adenoids, 900 from debility, 957 from skin diseases, 903 from diseases of the eye, 418 from bronchitis, 225 from measles and 174 from mumps. In addition, 19,864 had decayed teeth and 2,000 were affected by vermin.

In the month of March in the city of Toronto, 1,833 school children were examined and 1,156 cases of carious teeth were discovered. There were 488 cases of enlarged tonsils, 281 of defective nasal breathing, 115 of defective vision, while 135 cases of contagious diseases were excluded from the schools.

These figures would appear to the casual observer to warrant the physical examination of all school children. If the child is the father of the man, he should be builded upon a firm foundation.

### "REGULATING" THE SOCIAL EVIL.

We are doing, or attempting to do, all sorts of things to the prostitute in our more or less futile endeavors to abate venereal disease, not to mention the abating of the prostitute herself. There is a great deal of talk, too, about her, as well as doing. Because of the double standard, however, and some other things, we say less about the males involved in the great question. We insist that it is the woman who is the chief factor in spreading venereal diseases, because she consorts with many men. Then there is practically no such thing as a male prostitute, in the sense of hiring out the body, so to say, so we can't approach the problem through him.

The prostitute seems fated to be exploited by everybody—by the police, by the law, and by the regulating reformer and puritan alike.

It is considered possible to regulate the prostitute but no one considers seriously the regulation in some degree of the male who, mosquito-like, flits from the diseased to the healthy prostitute, or to an innocent woman, transmitting venereal virus. In dealing with yellow fever we kill the transmitter. The male venereal transmitter we ignore. He is a man, and therefore sacred against oppression. Public policy forbids his serious inconvenience. Public policy forbids that he be compelled to employ prophylactics. Public policy forbids that all male visitors be registered by the prostitutes whom they visit (though this has been done in Sweden) and be subject to examination in case a prostitute is found infected. Public policy forbids the promulgation of necessary information on the part of the health and other municipal authorities (in what a thorough manner such agencies could carry out a preventive propaganda!).

We think ourselves justified in penalizing the prostitute as such, but an equally proper object for discipline—the male bee who is a common carrier of venereal pollen—is beyond discipline. If men were obliged to practice prophylaxis venereal disease would not be transmitted by them to others, there would not be a thousand infected men to one diseased prostitute, and with the passage of time the infected class of women might almost cease to exist. While the prostitute is the incubator, it is the many males who are the disseminators.

Is it not because our laws are man-made that prostitutes are made the sole objects of attack? Is there not back of these laws a sex fraternity (aside from the puritanism of the dominant males and the double standard founded upon selfishness, sexual guilt and sneaking discrimination) that is narrow and unjust? The language of our legislators in framing these measures is dignified and guarded in the halls of legislation, but in the committee chambers and the back rooms of saloons and the grill rooms of clubs their language is truly revelatory and highly illuminative of their vicious psychological processes.

The very scientists who have devised prophylactic means for the use of males have little or nothing to say as to how women shall protect themselves. They are males themselves first, with all the characteristic selfishness of their sex, and scientists afterward. It is true they would isolate the woman after she becomes infected, for the protection of their fellow males. Science, like justice, should know no sex. We are so keen about protecting our precious selves that we devise no means of protecting our sisters.

Sex differentiation exists in these matters of "regulation," because woman has no part in the formu-

lation and construction of administrative policies. When she attains her full civic and political stature and is vested with the same powers in the State as is man, our laws will change their complexion and cease to be one-sided. How much of man's reluctance to invest her with such powers finds its reason in the divination that their exercise will sound the death knell of his special sex privileges?

### THE U. S. PUBLIC HEALTH SERVICE.

It is a matter of great satisfaction to all lovers of justice and fair play to note that Congress has tardily recognized the needs of the nation's health protectors, the surgeons of the Public Health and Marine Hospital Service.

Spurred on by the constant and incessant petitions of the medical press and the medical profession, our national lawmakers have placed this splendid service on an equality with army and navy surgeons. The somewhat ponderous title, having served its original purpose, has been abbreviated to meet modern demands and in the future will be known as the United States Public Health Service. In addition to its present duties the officers may study and investigate the diseases of man and conditions influencing the propagation and spread thereof, including sanitation and sewage and the pollution, either directly or indirectly, of the navigable streams and lakes of the United States. A feature which will delight the present officers of the body and will prove attractive to prospective surgeons is the increase in the salary list. Hereafter the annual salaries will be: Surgeon general, \$6,000; assistant surgeon general, \$4,000; ten senior surgeons, \$3,500; surgeons, \$3,000; passed assistant surgeons, \$2,400; assistant surgeons, \$2,000. To this amount is augmented the customary longevity increase.

For years the surgeons of this service have been overworked and underpaid. Now with a living wage assured the many vacancies will be filled and the members of the corps will be enabled to take up their arduous and highly efficient duties with renewed zeal.

### Pessimism Not Needed.

Perhaps we are not wholly right in regarding degeneration as essentially a sinister phenomenon. Evil connotations are practically always attributed to the term. Possibly we invite censure for our temerity in suggesting other, than evil connotations. About all the writers are calling upon society "to stay the tide of degeneracy which is rolling in upon us," and "to avert the race extinction which is staring us in the face." Their views are very alarming. Just at the present time English eugenicists, sociologists and medical leaders are indulging in frenzied prophecy and absolutely pessimistic judgments.

Alleged evidences of degeneration may be cited as follows: Defective teeth, the diminishing birthrate in nearly all countries, the increasing number of incompetent mothers (more especially in respect to inability to nurse), the increase of insanity, idiocy and imbecility, the increase of cancer and of eye and ear defects, the increase of crime, the doubled mortality rate from chronic disease, the decrease of centenarians, certain alterations of structure, such as decrease in the size of the chest, weakening of the feet, degeneration of the olfactory tract in the brain, shortening of the jaw and a decrease in the size of its muscles, continued atrophy of the ear and of its muscles, as well as of the abdominal muscles and of the palmaris and plantaris. Then new varieties of the race are appearing, or at least old defects are becoming intensified.

Thus we have the myopic man, the epileptic, neurotic, criminal, consumptive, inebriate, senile, dyspeptic and feeble-minded types, and what has been called the neuter type of woman.

It is a very gloomy picture that most of our eugenicists draw—or overdraw. One looks almost in vain for an optimistic view point. We are glad to note here and there a disposition to regard degeneration as a necessary accompaniment of progress. Thus it is being pointed out that because the teeth of birds degenerated ages ago we are not justified in saying that birds are on the way to extinction, that when the snake's legs degenerated a better adaptation to environment was obtained, that because man has lost the hair that once covered his body is no reason why we should deplore the fact. Well-cut clothes are a desirable evolutionary achievement. Our teeth are disappearing, because, it is said, we cook our roots, meat and grains, but the optimists point to the compensations. We do not need gorilla-like jaws and teeth to-day, say the cheerful scientists, because we no longer have to crack coconuts with them. They view the loss of the wisdom teeth as "a desirable eventuality." Although our vision has suffered, are we not, they ask, more than ever the masters of our fate? We have lost our claws, our third eye (the pineal gland), our tail, our once huge cæcum. Well, what of it? ask the cheerful eugenicists. One of these writers lays down the principle that "the maintenance of any organ in a state of unnecessary efficiency means a physiological tax, which, unless it brings corresponding benefits, detracts from the general power of the organism to deal with its environment." We do not require the dog's endowment as regards scent, nor the donkey's as regards ears, nor the monkey's as regards the tail, nor the ape's as regards the cæcum.

Go to, ye pessimists!

As to the decrease in the birthrate, there is room for honest differences of opinion as to the significance of it, whether sinister or beneficent. As to idiocy and imbecility, the Mendelian laws of heredity provide the fulcrum wherewith society may rid itself of a real menace, if it wishes to avail itself of a real menace, and there are many signs that society is awake, and not only ready to act, but acting. So far as we know, there was no opposition to the eugenic measure recently passed in the State of New York, providing for the sterilization of defectives, an unsuspected degree of public preparedness being thereby revealed. Crime and insanity, and many of the diseases that sap the vitality of the race, are soon to feel the wholesome influences that will flow from the sane economic adjustments soon to be instituted in the course of our social evolution. As to the neuter type of woman, she is a transitory phenomenon, a creature of peculiar social conditions that cannot long endure in the face of almost universal resentment and almost universal striving for industrial justice.

There is little need of pessimism, if one preserves a normal perspective. The alarmists, sensationalists and half-baked scientists are not new and abnormal varieties of the human race, but they may be said to be "intensifying old defects," somewhat after the manner that they profess to deplore in the degenerates, so-called. Does anyone know of a remedy for them? Are they not the atavistic representatives to-day of the pessimistic ape-man of a thousand years ago who sang the refrain: "Claws are going, hair is going, tails have gone!"

It has been shown by several observers that the majority of the mothers of syphilitic infants give a positive Wassermann reaction. Leroux and Labbé obtained it in 71 per cent. of cases, whether the mothers showed signs of syphilis or not. Other investigators give similar figures. From this fact it has been somewhat illogically inferred that all mothers of syphilitic children are themselves syphilitic, and that this explains Colles' law of immunity, the mothers being immune because they are always syphilitic.

## Medical Editorial Table

### The National Bureau of Health and the Presidential Candidates.

The people in general are indifferent to the establishment of a National bureau of health. Warnings of dangers impending have fallen upon deaf ears. Temperamental defects and convictions rooted in centuries of superstition account for the public's indifference. Strong expression of opinion on this subject is not to be found in the platform of any of the parties in the political field. This, however, is not greatly to be deplored, for many measures are adopted during an administration which were undreamed of at the time of platform making. Thus the occurrence of plague might possibly lead to the bureau we want. The idea of prophylaxis, clear and self-evident to the scientific mind, is still a little beyond the average intelligence. Let us hope that education will bring about the establishment of the bureau before it is rushed into existence by panic at some sudden epidemic. The platform of the Democratic party contains a short reference to the desirability of some Federal supervision of the general health, very like the pronouncement of Mr. Roosevelt at Chicago on August 7th, but Mr. Wilson has written that his mind is still "to let" on the subject of a National health bureau. The Republican platform contains perfunctory reference to the matter, but Mr. Taft has personally spoken again and again in favor of such a bureau. He has dealt with the subject at some length, at the University of Pennsylvania in 1909, and in his Message at the beginning of the third session of the Sixty-third Congress. The source of the opposition to the bureau is well known and thoroughly despised by intelligent people. It has been encouraged in the past by an apparent unwillingness somewhere to enforce the provisions of the Food and Drugs Act. Yet the establishment of a National health bureau is inevitable.—(*N. Y. Med. Jour.*, Aug. 17, 1912.)

### Chance and the Prepared Mind in Medicine.

The recent address of Dr. Richard M. Pearce, of the University of Pennsylvania, at Syracuse University, is of particular interest as representing some of the ideals which are recognized and toward which we are striving in American medical education. "In the fields of observation chance favors only the mind which is prepared." The preliminary education of the medical student should have produced familiarity with laboratory work in physics, chemistry and biology (at least two years of college training). As to the methods of teaching in the medical school, Dr. Pearce believes that the instruction, in both laboratory and clinical branches, should be based so far as possible on the method of observation and experiment. Its value over the lecture system is so great that it should be followed and should be supplemented by demonstrations and conferences or recitations rather than by lectures, if one truly seeks to prepare properly for the practice of medicine. Dr. Pearce regards as most important of all clinical instruction in a hospital owned or controlled by the university of which the medical school forms a part. The relation of the hospital to medical teaching and research is one of the essential educational problems of the day. And there should be the academic freedom which comes only to teachers in such hospitals under university control. The hospital must become the laboratory of the clinical years. The value and meaning of academic freedom in clinical teaching is perhaps most fully appreciated by those in whose experience efforts in this direction have been hampered by unsympathetic or intolerant hospital trustees. In schools thus equipped, Dr. Pearce believes that a fifth year of hospital residence should soon be established as a requirement for the degree of doctor of medicine. Above all he believes that the entire course of medical education should be animated by the spirit of research, which is itself the motive power in scientific study. Without the temperament of trained investiga-

tion there can be no true progress in medical education. "Life is short and the art long, the occasion instant, experiment perilous, decision difficult." It is in such occasions, whether in the laboratory, in the clinic or in life, that the prepared mind reacts correctly and therefore acts, not by chance, but by self-determination to the best end.—(*Boston Med. and Surg. Jour.*, June 27, 1912.)

#### An Interesting Tale of Two Cities.

Memphis, Tenn., a representative community of the New South, found herself threatened with an epidemic of an exhausting and highly fatal disease—typhoid fever. Immediately the guardians of the public health, the Health Officer and the medical profession, all the officials of the city administration and the public press, sounded the alarm in no uncertain terms and compelled the attention of reluctant citizens and even of the outside world. The epidemic was strangled in six short weeks, and the citizens of Memphis and the stranger about to enter her gates know that their welfare is a matter of concern in Memphis and that health and life will be jealously guarded by a well-manned municipal administration. Marquette, Mich., estimates the value of the health and life of its citizens in a different way. Its yearly health department appropriation has been four hundred dollars. An epidemic of typhoid fever began about the same time as the epidemic in Memphis. The cases were not reported and nobody attempted to discover the source of the infection. Some of the business men would have no mention of the seriousness of the situation made in the papers, arguing, with the fatuous stupidity of the business men in some communities, that the city was being unfavorable advertised in this way. Result? One hundred and thirty cases in the city, the intervention of the State Board of Health, paralysis of business, heavy expense, epidemic increasing, the source of infection not yet attacked, the local physicians threatened with arrest, and the weakness and stupidity of the community exposed. And so, as far as business and the rest of the world is concerned, nobody is afraid to go to Memphis and everybody is afraid to go to Marquette.—(*Lancet-Clinic*, June 29, 1912.)

#### Light Thrown on the Cause of Typhoid by Vaccination with Live Cultures.

There is no longer any reason to question the specific etiologic agency in typhoid fever of the bacillus described by Eberth thirty years ago and isolated about the same time by Gaffky. It is true that many have so questioned, because of the scarcity of experimental proof that the typhoid bacillus is the specific cause of the infection. But Metchnikoff and Besredka have recently succeeded in infecting chimpanzees, as well as in establishing protective inoculation in them. The interesting point in the latter connection is the fact that neither killed cultures nor their autolysates protected chimpanzees against infection, but that vaccination with living cultures produced an immunity apparently as definite as that produced by an attack of the disease. Vaccination with non-sensitized cultures produced an intense local and almost no general reaction, while sensitized cultures caused only a feeble local and almost no general reaction; the two measures appeared to confer equal immunity to infection. This work fulfils for the first time the postulates of Koch as to the etiologic relation of the *Bacillus typhosus* to typhoid fever, shows the possibility of absolute protection by vaccination with living cultures, and emphasizes the importance of not relying on vaccination with killed cultures to the exclusion of all other precautionary measures. It also appears that persons vaccinated with sensitized typhoid bacilli do not become either "carriers" or infected with typhoid. In the large series of vaccinations which these investigators have carried out (745 cases) the use of sensitized cultures appeared to be safe, general reaction being rare. If further use of this method shows its harmlessness, it would seem that an important advance had been made.—(*Jour. Am. Med. Ass'n*, Aug. 24, 1912.)

## Public Health

### SHOULD VENEREAL DISEASES BE REPORTED?\*

GUY L. KIEFER, M. D.  
City Health Officer,  
Detroit, Mich.

It is a strange fact that, in their work for the prevention of contagious diseases, little attention is paid by health officials to venereal diseases, yet this class of diseases is certainly prevalent, and is contagious and dangerous to the public health. Let us consider for a few moments the prevalence of these diseases. It has been determined by statisticians that 80% of all adult males suffer at some time during their lives from gonorrhea, and 10% from syphilis; 60% of all abdominal operations upon young women, the first year or so after marriage, are due to gonorrheal infection; 80% of all deaths from pelvic diseases are due to the same infection; 98% of all blindness in infancy is due to gonorrhea. Nearly all cases of apoplexy in persons under 45 years of age; 90% of all cases of locomotor ataxia, and many cases of paresis are due to syphilis.

It was estimated, some years ago, by a committee of fifteen physicians appointed for that purpose, in the city of New York, that there were 200,000 cases of venereal diseases annually in New York City. If that is true to-day, and figuring Detroit as one-eighth the size of New York, it would have 25,000 cases of these diseases annually. If we added all of the cases of tuberculosis, pneumonia, scarlet fever, diphtheria and typhoid, the sum would hardly equal one-half the above number.

In discussing the prevalence of these diseases, it is to be remembered that a small percentage of them may be found among the so-called extragenital cases, that is to say, in persons who contracted the disease, generally syphilis, from infected towels, drinking cups, or in some other equally innocent way.

While 5% of the total number of cases of any given contagious disease would not mean much, in the case of venereal diseases even this small percentage indicates quite a number of cases. The question arises, what are we going to do? The problem must be solved by agitation, education, legislation.

The first requisite for effective work against the spread of any contagious disease is a knowledge of the cases; that is, a report of all of them. How can we get satisfactory reports of this class of diseases? It would seem to me that a specific law for this purpose is required. An attempt to have such a law enacted will meet with opposition, but this is to be expected. The same opposition was successfully met when the law requiring the reporting of cases of tuberculosis was enacted. Ten years ago it would not have been possible to have passed a tuberculosis law. The objections then offered were that the disease was not contagious in the same sense as are some of the other diseases; that the Board of Health would isolate all cases, and placard the houses. Further, it was held that the patients must not be told that they have tuberculosis, and that the public must not know about the patients. Most of these objections will not hold in the case of venereal diseases. No one will dispute that these diseases are contagious, nor will anybody accuse the Board of Health of a desire to isolate all of the cases nor to placard the houses. It would seem to me that patients should know when they are suffering from these diseases, and the seriousness of the disease should be pointed out to them; and so far as the publicity of the report is concerned, this can be prevented by a section in the law protecting the records that now exist in the tuberculosis reporting law. California has made the start in acquiring by law a report of venereal disease cases; New York is a close second, and I can see no reason why Michigan should not join in this requirement.

\*Read at Michigan Health Officers' Association, May 22, 1912.

In the meantime, before we get our cases, or all of them reported, we must not forget that the whereabouts of a large number of the patients suffering from these diseases is known, and it seems to me that it should be the duty of the public official to go after the known cases. Before any cases of tuberculosis were reported to the Board of Health in Detroit, we employed a graduate nurse to make a house to house canvass in the search of such cases. The pretext was that the nurse was to give instructions to householders in the prevention of tuberculosis, but, incidentally, she discovers cases, at least suspicious cases; these in turn were referred to the physician of the Board of Health, and when found to be suffering from tuberculosis, were treated accordingly. It is much easier to locate a number of cases of venereal diseases in any city in the houses of prostitution. Detroit has at least 125 such places with approximately 500 inmates. The Detroit Board of Health has inaugurated a method looking towards the prevention of venereal diseases from the above named sources, in the following manner: We have had all of the prostitutes, known to the police, brought to the office of the Board of Health, where they have been examined by a physician in the presence of a nurse, and a card record kept of their cases. When a woman was found to be diseased, the mistress of the house from which she came was notified that she must be isolated until she had completely recovered, and that when so recovered, she must present herself again for examination at the Board of Health, so that the physician of that Department may pass upon her case. When women who were examined were found to be free from infectious disease of this nature, they were told that if they should become infected, the Board of Health was to be notified immediately, and whenever they were subsequently examined and found to be infected, and the case had not been reported, then the house would be placarded. The subsequent examinations referred to are made at unannounced and irregular intervals, so that the women can never tell just when they are going to be taken to the Board of Health Clinic for examination. The result of this system is an enforcement of the reporting of the cases, at least from the houses of prostitution. We can get, besides this, reports from Free Dispensaries, from the Juvenile Court and from hospitals. By this means, public opinion can be aroused to such an extent that it will be possible to get a law, in the near future, requiring the reporting of all cases.

It seems to me that another bit of legislation which would help to prevent the terrible results following cases of gonorrhea and syphilis is a marriage law requiring both parties about to be married to be in good health, certainly so far as venereal infection is concerned. This could be accomplished by requiring the certificate of two physicians, in good standing, with a statement to the effect that the person applying for a marriage certificate had been examined and found to be in good health. A law of this kind would not stamp out all cases of venereal diseases, but it would prevent some of them, and would certainly protect the innocent. Until we have such legislation, physicians should instruct their patients not to marry until they are free from these infections, and parents should insist upon their prospective sons-in-law being in good health.

#### To Prevent Migration.

Physicians in all of the eastern and southern States will be asked by the National Association for the Study and Prevention of Tuberculosis to stop sending consumptives in the last stages of tuberculosis and without sufficient funds to the southwestern part of the United States in search of health, according to an announcement made by that association.

While it is impossible to tell accurately how many consumptives there are at present living in the States of Colorado, New Mexico, Arizona, Southern California, and Western Texas, it is probable that no less than 10 per cent. of the 6,000,000 people in this territory have tuberculosis themselves or have gone to

the West because some member of their family has had it. Every year, the health authorities estimate, not less than 10,000 consumptives hopelessly diseased go West to die. For these cases, the climate of this section of the country can do nothing, and they are compelled to die in strange surroundings and thousands of miles from home and friends.

The National Association points out further that from 50 to 60 per cent. of these advanced cases are too poor to provide the proper necessities of life, and they are either starved to death or compelled to accept the meagre charity which this part of the country affords.

"No consumptive should go West for his health," says the association, "unless he has a good chance for recovery from his disease, and unless especially he has at least \$1,000 to spend for this purpose, over and above what his family may need.

"Tuberculosis can be cured in any part of the United States, and it is not necessary for a tuberculosis patient to go West."

#### Tuberculosis Day.

Over 100,000 churches and religious societies will be urged to give special attention to the prevention of tuberculosis on Sunday, October 27th, or on some day during the week preceding or the week following that date. This season has been set apart and designated as the Third National Tuberculosis Day by the National Association for the Study and Prevention of Tuberculosis.

The observance of Tuberculosis Day this year will be utilized by anti-tuberculosis workers not only for the general education of churchgoers on consumption, but also for the purpose of interesting them in the sale of Red Cross Christmas Seals.

Millions of circulars and other forms of literature will be distributed, and the support of every religious denomination will be sought.

That tuberculosis is a serious problem among church congregations is evidenced by statistics which the National Association gathered last year, which show that 10 per cent of all deaths among church members are caused by tuberculosis. Based on these figures and on the mortality statistics of the Census Bureau, over 52,000 of the 33,000,000 communicants in churches in the United States die from tuberculosis every year. This figure assumes that the death rate of 1.60 per 1,000 population in the Registration Area applies to all churchgoers, when, as a matter of fact, the rate would probably be higher.

#### Red Cross Seals.

Seventy-five million Red Cross Seals are now being printed for the holiday sale of these anti-tuberculosis stickers in 1912.

The campaign for selling Red Cross Seals will be carried on in practically every State and Territory in the United States, and in Porto Rico, the Canal Zone, Hawaii and Philippine Islands. No less than 100,000 volunteer agents, including department, drug and other kinds of stores, motion picture theaters, individuals, and others, will be engaged in the work. Before the sale is completed, it is expected that at least 100,000,000 seals will have been printed and distributed, besides several million posters, display cards and other forms of advertising literature.

Last year over 32,000,000 seals were sold; in 1910, over 31,000,000; in 1909, about 23,000,000; and in 1908, the first year of the sale, 13,500,000. In all, the sale in the four years has realized nearly \$1,000,000 for the anti-tuberculosis campaign, since all of the money from this movement goes for the prevention of consumption.

New York State sold the most seals in 1911, disposing of 6,356,368; Ohio came next with 3,500,480; Wisconsin third with 2,913,144, and Illinois fourth with 2,101,632. Texas showed the greatest percentage of gain, having increased its sale from 100,000 in 1910 to over 1,250,000 in 1911. Indiana showed the second greatest gain, with an increase from 683,756 in 1910 to 1,245,545.

## INDUSTRIAL DISEASES IN THE UNITED STATES.

The failure of the national and state governments to protect workmen from preventable diseases of industry is strikingly brought out in a report just issued of the Second National Conference on Industrial Diseases. It is shown that in three years the Illinois Commission found 578 cases of lead poisoning in that state and that a hasty and incomplete study disclosed 121 cases of this one disease of occupation in New York City alone. Many of these were due to the absence of regulations requiring the use of simple protective devices and practices which, it is pointed out, are in general use in Germany and England under legislation providing for the payment of insurance benefits in the case of sickness directly due to industry.

A growing appreciation, however, of the need of regulating the conditions among which the thirty million wage earners of this country carry on their work is shown from the recent prohibition by Congress of the manufacture or sale of "phossy jaw" matches and from the enactment in eight states during the past year of the bill prepared by the Association for Labor Legislation requiring the compulsory reporting of certain of the more evident industrial diseases. The report, which is profusely illustrated, is divided into four parts under Diseases of Occupation. Dr. W. Gilman Thompson presents a plan for the classification of occupational diseases; compressed air illness, or "caisson disease," is discussed by Dr. Frederick L. Keays from a study of 3,692 cases under his observation during the construction of the Pennsylvania East River Tunnels, and Dr. L. M. Ryan, physician to the Foundation Company, deals with the same disease and the preventive methods to be adopted in caisson work. Occupational skin diseases, nervous and mental diseases, diseases of the eye, and industrial poisons are covered by such well-known authorities as Drs. John A. Fordyce, Chas. L. Dana, Ellice M. Alger, and David L. Edsall. Dr. Richard C. Cabot of Boston pleads for more work by hospitals and clinics in the prevention of industrial diseases and Prof. C. E. A. Winslow contributes a much discussed paper on temperature and humidity in factories. Prof. Baskerville of New York proposes the use of certain preventive agencies for workmen exposed to dusts, fumes and gases.

If industrial disease is to be adequately handled in this country, information must be had as to the extent of these diseases and as to the particular occupations in which they occur, points out Dr. Cressy L. Wilbur, chief statistician of the U. S. Census Bureau. A proper nomenclature of occupations is the first requisite and this, Dr. Wilbur announces, is now being prepared.

Dr. Leonard W. Hatch, statistician of the New York Department of Labor, who has had charge of the registration of industrial diseases in New York State, emphasizes the need for educating physicians as to the intent and scope of registration laws and testifies to the gratifying results obtained from the first few months' operation of the act.

Over \$366,000,000 was lost in wages through over 13,400,000 cases of sickness among wage earners in the United States last year, according to a booklet on industrial diseases recently issued by the New York Department of Labor. For the purpose of preventing as many of these diseases as are directly due to harmful and avoidable industrial processes, reports of certain diseases of occupation are now by law required to be filed by physicians practicing in New York.

It is the intention of the Department to inform manufacturers and physicians of preventive and safer industrial methods and it is believed that with the assistance of the medical profession, the necessary facts may be gathered not only as to the six reportable diseases, but also as to any other diseases clearly attributable to employment. There has been sent to the physicians, hospitals and dispensaries in New York State a revised and much improved reporting certificate in form similar to the U. S. standard death certificate. As the relation of industry to

disease and the effect of occupation upon health is so little recognized among physicians in this country, each reporting blank is accompanied by the booklet explaining the new reporting law. "Special uses of nerves and muscles," it is stated, "bring about their definite occupational diseases in the operation and control of machinery, and special strains result from lack of variety in work, from concentration, and from the haste involved in competition or speeding up." The more important harmful substances, an indication of the industries in which they are commonly prepared or used, the mode in which they enter the body, and the diseases or symptoms to which they give rise, are then printed in four parallel columns as a ready guide to the physician.

Paul Kennaday, Secretary of the New York Association for Labor Legislation, writes to the MEDICAL TIMES:

"As an illustration of the easily preventable character of some of these diseases of occupation, the last report of the New York Department of Labor calls attention to the death of three men and the blindness of two others, due to varnishing with wood alcohol the interiors of closed, unventilated beer vats. There is available a practically safe substitute for this dangerous mixture, and furthermore, the mechanical ventilation of closed chambers during varnishing is necessary as a matter of common knowledge. Similar cases of crass ignorance, which ought to be made criminal negligence, could be multiplied indefinitely. Thousands of men, women and children are killed or put out of their struggle every year by disease because they are forced to the use of harmful and avoidable methods of manufacture. All over Europe the protection of wage earners against unnecessary disease risks is coming to be recognized as a community duty. With this new reporting law which New York and seven other States have recently adopted, we are, as Dr. Osler once put it, sitting on the edge of the bed and rubbing our eyes. In a few years with the co-operation of physicians I believe we shall see among the profession and the public this movement for the prevention of industrial disease growing by leaps and bounds. Industrial disease can be practically eliminated from our industries."

## HEALTH GLEANINGS.

The recent annual meeting of the Michigan Health Officers' Association brought out so many salient facts anent health matters which are so full of interest to the general practitioner that some are appended:

The public health laboratory furnishes certain facts that should appeal to the reason of the public health worker and aid him in drawing logical conclusions to meet conditions as they exist. In many of the most important investigations conducted in the interest of public health the laboratory findings are almost indispensable. Nevertheless, such laboratory findings should be regarded as aids and all information from other available sources should be carefully secured and duly considered in drawing final conclusions. The relative value of laboratory findings to information gathered from other sources varies greatly under different conditions. In a large number of cases laboratory results are not specific, but are indirect and require interpretation. Under such conditions, other information may be absolutely necessary for interpretation of laboratory results, and the same results may have an entirely different significance under different circumstances.

The investigation of public utilities, in relation to outbreaks of disease, should include, first, epidemiological history of the community and a thorough study of the entire outbreak, comparable to the clinical study of a case; second, sewerage systems and general sanitary conditions; third, public water supplies, milk and other foods; fourth, laboratory examinations according to the indications and conditions as revealed in the preceding steps of the investigation. This order of procedure would obviate many useless laboratory examinations, but would give the desired results. The significance of the laboratory investigation would be simplified and a more reliable interpretation of the findings could be given.

An endeavor to locate the source of an outbreak of typhoid fever by first resorting to the analysis of a sample of water or milk is about analogous to making an extensive laboratory investigation of a patient's urine or blood as a first step in

the clinical examination of the case. Both analyses have their value at their proper time and place, but their time is according to indications and their place is on the balance of reason weighed in the light of other findings. In dealing with typhoid fever the history of each case is comparable to a single symptom in an individual case-history. The study of many associated cases is necessary to a proper diagnosis, just as the study of the whole symptom complex is necessary to the exact diagnosis of an individual case of any disease. As any one symptom is seldom pathognomonic, so also is a single case-history of typhoid rarely a key to the source of an epidemic.—HOLM.

The State Laboratory is of great value in all of the simpler tests, but becomes indispensable when we look for more complex aids. We look for help along various lines:

- (a) Cultural investigation of secretions and blood.
- (b) Widal test.
- (c) Wassermann test (Noguchie test).
- (d) Determination of degrees of toxicity of certain strains of bacteria.
- (e) Determination of presence of rabies.
- (f) Water analysis.

It seems to me that the whole health officer system should be rearranged. We should have three divisions of the health board.

- (1) Health officer—the unit.
- (2) Health officer—the section.
- (3) Health officer—the State Board.

Each of these first two classes should be responsible directly to the one above, and the State Board should have direct control of the whole, without intervention of other bodies. With such an organization, flanked by the efficient laboratory we have, we could get much better results.—FISCHER.

Our mortality from typhoid is higher than from the other acute infections. Why should our efforts of control be less? The time necessary for diagnosis, in many cases, necessitates a delay in reporting and health departments should be prepared to aid in every possible way by having well-equipped laboratories, in charge of competent men. Of course, well equipped and manned laboratories mean expense, and no doubt our smaller cities meet with this obstacle. However, in this State we all may resort to our State laboratory, and while not as convenient as a local laboratory, it should require but a few hours longer to get reports.

My chief complaint is with the physicians who do not see the importance of such procedures, and it is really astonishing to look over our records and find how few men avail themselves of the opportunities at hand for correct and early diagnosis.

Every case, as soon as reported, should be investigated by a trained agent of the Board of Health, to secure the full epidemiological history, and such history be given careful study to locate if possible the origin of the case. Specific directions, and not general, should be given the members of the household at this visit, as to the manner of disinfection of the excreta, clothing, and how to properly care for dishes and utensils which may be carried to and from patient or sick room.

Those who have the care of the patient should be instructed as to what must be done to avoid contracting the disease or carrying the infection to other members of the family. Printed instructions may be left, but under no circumstances will they take the place of those by word of mouth.—SLEMONS.

The first step in the proper disposal of garbage should be educational. Teach the householder that he is no longer an Indian, but that he lives in a civilized community, and should respect the rights of his neighbors; that it is not necessary to throw out his garbage, nor make a nuisance of the garbage can. "Drain garbage of all moisture, then wrap it in paper before putting it in the can, and it will neither smell badly in hot weather nor freeze and stick to the can in cold weather. Do this, and have a clean can at all times." Drain moisture through the detachable sink strainer; use the waste paper of the house, and there is so much of it—"waste paper" in the 24-page editions—for wrapping. Then place the package in the can—preferably a galvanized iron one of about 20 gallons capacity, with a tight-fitting, overlapping cover, and with handles on the sides—placed at the back of the lot, or at a point most accessible to the collector. This first step is an educational one, and the householder soon learns that it also is a sanitary one. Heat, moisture and the fly are all eliminated.

There is plenty of air space between the packages of wrapped garbage, and the conditions favoring putrefaction are removed. The indictment against the garbage can is that it is a foul, maggoty mess of putrefaction and a fly breeder, and it

stands self-convicted on both counts. Draining of moisture and wrapping in paper does away with all of this.

The public is awakening to the fact that it is possible to eliminate the fly. It has been accomplished in Havana and the Canal Zone by keeping the city constantly clean, thus eliminating the breeding places of the fly. It is a well-known fact that not only manure but any putrefying animal or vegetable matter furnishes breeding places.

The draining and wrapping of garbage has its economic as well as sanitary side. The sanitary condition of the garbage can has been the principal factor in determining the cost of the collection of garbage. The demand for frequent collection has arisen from, and because of, the sanitary condition of the garbage receptacle. The life of the can is very much prolonged. Garbage kept this way is not a nuisance; does not invite flies; does not need to be collected but once a week, even in warm weather, thus making a great saving in the cost of collection.—HALL.

"Conservation" might well be called the keynote of present-day industry. The net profits of nearly every business, be it agriculture, manufacture or commerce, are measured primarily by the degree of conservation maintained. We hear much nowadays of "conservation of the soil," "conservation of fuels," "conservation of forests," "conservation of waste or by-products," "conservation of game," "conservation of this and that," and well we should; but there is one other factor subject to the application of measures of conservation of which we do not hear enough, and to which is given far too little attention—"CONSERVATION OF HEALTH." Failure to appreciate this point costs the people of Michigan more by death, sickness, discomfort and money loss every year than is saved by all other conservation measures combined. The combined capital stock of all the national banks of Michigan amounts to nearly \$15,000,000. Tuberculosis costs the people of Michigan \$20,000,000 each year. Add to this the cost of typhoid fever, small-pox, cholera infantum, and the long list of preventable diseases, and the amount is appalling.—DIXON.

## DIED IN LINE OF DUTY.

Many of the heroes of medicine wear the nation's uniform, as surgeons of the Army, Navy or Public Health Service, who have died as martyrs that the cause of medical science might be advanced. The people remember and revere the memories of Carroll, Reed, Lazear and the numerous surgeons who found a hallowed niche in the medical hall of fame. But lest we forget, there are physician heroes who practice in the city and the country whose deeds are none the less heroic, though less spectacular. Some day a word painter will tell the story of the bravery of the civilian physicians who have dared and died for the sake of suffering and oftentimes unappreciative humanity. Until this author appears the civil practitioner and his valorous acts will be dimmed by those of his brothers in the united services.

The recent tragic death of Past Assistant Surgeon T. B. McClintic, of the U. S. Public Health Service, from Rocky Mountain spotted fever, contracted while eliminating that disease from the Northwest, brings to mind the courage of the surgeons of our splendid health service. The MEDICAL TIMES has often shown its high regard for the men in Surgeon General Blue's corps and its history has been well noted in these columns, but we have never taken up the sacrifices made by this heroic little band of 418 men.

Within the last 35 years 15 surgeons have died as martyrs to duty. The New York SUN pays a high tribute to the loyalty and devotion of the surgeons of the organization in a vivid portrayal of their valiant deeds and gives a history of the death of some:

Yellow fever claimed the greatest number of victims—six out of the 15. The first was Surgeon Waldo. Yellow fever in 1878 ran a terrible course along the Mississippi Valley. Its heaviest strokes fell at Memphis, where thousands died. It glided northward as far as Chicago. At Cairo it took a heavy toll. One doctor after another grew sick at heart and fled the pestilence. Waldo, alone, who had been assigned to the post at Cairo, stayed on. Night and day he toiled single-handed among the dead and dying. Finally he, too, contracted the disease and died, and he was buried near the scene of his heroism, like a soldier whose body is buried in the trenches.

An ironic jest of the angel of death made Assistant Surgeon McAdam its victim. In 1898 McAdam was taking the examinations held at Washington for entrance into the service. It is customary during these examinations to inform the candidate of his standing as he goes along and if he is not reaching the required standard he is excused from further examination. Through some mistake McAdams' name became confused with that of another candidate, whose papers were proving unsatisfactory. McAdam was told that he need not continue the tests. Disappointed, he started for his home in Iowa. The mistake was discovered and a telegram caught him as his train reached Cincinnati. He returned, passed successfully, and was almost immediately detailed to duty at Key West, where yellow fever was epidemic. He had scarcely begun work when he himself contracted the fever and died in a few weeks.

The death of Assistant Surgeon Branham robbed the service of one of its brilliant minds. He entered the service in April, 1893, and after four months in New York he was sent to Brunswick, Ga., where yellow fever was epidemic. He died there shortly, a martyr to duty.

Most extraordinary of all is the story of Surgeon Robert P. Murray. When the Civil War began he enlisted as a private in an Ohio regiment. The close of one battle found him left for dead among the heaps of slain, with a serious wound in the head. He was taken to a Southern prison-hospital, finally recovered, though with a ghastly scar on his cheek, and at last regained his freedom by exchange. He promptly re-enlisted. This time he was shot in the leg. His wound was found to be so serious that it was decided the leg must be amputated. Murray objected, but he was told that the operation would be performed the next morning. But when morning came Murray's cot was found empty. No trace was found of him and it was decided that he had died in the night and had been buried with others in the general confusion. He was marked "Dead" on the regiment's roster.

But he was not dead. Friends had spirited him out of the hospital to avoid the amputation. He was sent home, but when his wound had healed the war was over. Years after he applied for a pension. The department replied that it regretted to inform Dr. Murray that he was officially dead and therefore they could not grant his request, etc. But he got the pension eventually.

Murray studied medicine after the war and became an assistant surgeon in the Public Health Service in 1872. For 30 years he fought the yellow fever epidemic which came year after year along the Gulf coast. In the dreadful outbreak on the Mississippi in 1878, which killed Surgeon Waldo at Cairo, he bore a heroic part at Memphis, the center of the plague. In the autumn of 1903, grown gray in the service, Surgeon Murray was in Texas still fighting to check the ravages of the disease. While driving to a quarantine hospital the horse became unmanageable, upset the wagon and Murray was thrown to the ground and he was killed.

Thirteen other men, besides the eight who died while combating yellow fever, have contracted that disease in line of duty, but have recovered. These are Drs. Carter, White, Cobb, Wasdin, Fricks, Berry, Rucker, Von Ezdorf, Goldberger, Richardson, Parker, Guthrie and McKeon.

Prominent on this list stands the name of Surgeon Henry R. Carter whose name stands in medical literature as that of the first investigator to demonstrate that yellow fever does not appear in a locality for two weeks following the introduction of the first case.

Five officers of the service have contracted typhoid "in line of duty" within the last five years. Passed Assistant Surgeon Joseph W. Goldberger, who has only recently recovered from an attack of typhoid in Mexico City, has aided science by his identification of Brill's disease. The four other officers were Richardson, McCoy, Miller and Marshall. Passed Assistant Surgeon Thomas F. Richardson and Assistant Surgeon W. W. Miller died of it. Dr. Miller's death in the autumn of 1907 followed from his experiments with typhoid germs in the hygienic laboratory at Washington. His work in this line had shown surprising aptitude for so young a man. Dr. Richardson had already achieved a great reputation as a public health officer when, in the Spring of 1905, while en route to South America to act temporarily as a health officer for one of the Andean republics, he died at New Orleans.

The average weight of the European brain is 1,360 grammes for men and 1,220 grammes for women. In general, very few normal brains weigh as little as 1,150 grammes, and many weigh more than 1,500 grammes. But in criminals the brain weight of the majority is less than 1,300 grammes, whereas in normals about one-quarter weigh less than 1,300 grammes.

## Obstetrics and Gynecology

### GENITAL CARCINOMA

Carcinoma of the cervix should be treated by extirpation whenever possible. The operative scope in these cases has been enormously extended of recent years by the adoption of the modern radical operation brought into prominence by Wertheim. Whereas by vaginal hysterectomy probably not more than 15 per cent. of the cases presenting themselves were able to be dealt with, the operability rate of the modern operation varies from 40 to 70 per cent. according to the views and practice of the surgeon.

The danger of the operation varies according to the advancement of the growth, the bacteriological content of the vagina and the physical state of the patient.

In a woman otherwise sound and not unduly fat, and with a growth only moderately advanced and not seriously infected, the risk of the operation is probably not above 5 per cent. in expert hands. On the other hand, great obesity, advanced age, physical debility and extensive growth are grave handicaps. Probably the most serious drawback of all is a breaking-down, stinking condition of the cervix. Absolute sterilization of the infected area is probably impossible, so that the operation area is liable to infection from the vagina below the line of amputation.

The prospect of permanent cure depends on the degree of advancement of the growth and also on the thoroughness with which the operation is carried out. A complete cure can be claimed after five years' freedom from signs of recurrence. Most recurrences occur within two years.

When is a case of carcinoma of the cervix not suitable for operation?

First and foremost, when there is extensive involvement of the anterior vaginal wall and the base of the bladder. It is true that portions of the bladder or ureters can be and are excised, but it is undesirable save in exceptional cases. A vesico-vaginal or uretero-vaginal fistula is likely to result, causing great discomfort to the patient, while the prospect of permanent cure in a case so advanced is small. Extension of the growth laterally or backwards is not so serious a matter. Induration of the broad or utero-sacral ligaments is often inflammatory, not carcinomatous. That the uterus cannot be pulled down is no matter, but absolute fixity contra-indicates the operation.

In many cases an examination under an anæsthetic is required to decide the point, and even this sometimes fails. In such a case the abdomen should be opened and the operation perhaps proceeded with, and if it is found possible to separate the bladder it will be able to be concluded. If not, the surgeon must desist and close the wound. These incomplete cases recover satisfactorily from the operation as a rule.

Carcinoma of the corpus is most common during the first ten years following the menopause and its recognition is often difficult. A diagnosis of senile endometritis is frequently made when carcinoma is actually present. An opinion should never be rendered in such conditions until after the state of the interior of the uterus has been operatively ascertained.

Carcinoma of the body should, as a rule, be treated by local abdominal hysterectomy, the cervical canal having previously been closed by suture. With the uterus should be removed both appendages and all the upper part of the broad ligaments.

It is rarely necessary to subject the patient to the severity of an operation as radical as that for carcinoma of the cervix for the track of lymphatic permeation is not the same. The operation would, of course, be much easier than in the case of carcinoma of the cervix, but this is no justification. The inclusion of cases of carcinoma of the corpus in lists of "Wertheim's" operations invalidate such statistics.

An alternative method is vaginal hysterectomy. This is specially suitable for old, stout patients with an atrophic uterus. It is not good practice to perform it when the uterus is en-

larged, for in the manipulations necessary to extract it the thinned musculature may give way and allow the growth inside to disseminate.

If a secondary nodule be present in the vaginal wall high up, the case, if it be considered worth while to operate at all, had better be treated by a mitigated form of the abdominal radical extirpation carried out for carcinoma of the cervix. If the nodule be low down Schauta's operation by paravaginal section is indicated if the growth is otherwise removable.—(*The Practitioner*.)

#### Repeated Ectopic Pregnancy.

Four cases of ectopic pregnancy recurring in 36 patients operated on by the author form the basis of an instructive article. He finds from a study of the condition that out of 1,608 patients there were 58 cases of repeated ectopic pregnancy, and literature on the subject shows 55 out of 1,390 cases, or a total of 3.7 per cent. (113 cases out of 2,998).

Out of 132 cases nine women became pregnant during the interval between the two ectopic gestations, seven being normal pregnancies and two abortions. In no instance was there an interval pregnancy in a patient who had never had a previous one. The writer concludes that normal pregnancy following an ectopic does not occur as frequently as one might expect.

He suggests that if a woman has had no children and is young, or, being older, is desirous of having children, we should preserve the opposite tube unless it is hopelessly closed. This is done with the full knowledge that further pregnancies may not occur and that she may have, in spite of the normal appearance of the tube, another ectopic pregnancy. In women who have had children we may be governed by her desire to have more, and may leave the opposite tube unless it is absolutely closed. In women who have had children and have borne as many as they desire, we should unhesitatingly remove the opposite tube and preclude the possibility of further ectopic pregnancy whether the tube appears normal or not.—(Smith in *American Journal of Obstetrics*.)

#### Eclampsia.

These conclusions in the diagnosis and treatment of eclampsia are the views of an authority:

1. Albuminuria is the most uniformly present symptom of pre-eclamptic toxemia.
2. Its persistence, in spite of treatment, is more significant than its quantity.
3. Albuminuria, rise in blood pressure, and edema are unfortunately "grouped" in their severity.
4. The child's interest in induced labor is identical with the mother's.
5. Eliminate vigorously before starting labor.
6. Whenever under reasonably vigorous treatment the patient does not improve, induce labor.
7. In the presence of actual convulsions: (a) If the cervix is open apply forceps or do version; (b) if the cervix is closed do vaginal or abdominal Caesarian section; (c) avoid the strain of labor.
8. Gas is the anesthetic of choice for operative procedure, next ether; never chloroform.
9. Avoid undue forcing of hot packs for fear of heat-stroke.
10. Secure time for production of elimination by controlling convulsions with morphine.
11. Ordinarily the high blood pressure needs no specific attention.
12. The successful treatment of eclampsia requires much personal attention by the physician.—(Skeel in *Cleveland Med. Jour.*)

#### Tuberculosis of the Female Genitalia.

Any portion of the female genitalia, from vulva to ovary, may become tuberculous, but in the great majority of cases, in nearly 85 per cent. according to Krömer, the tubes are in-

volved. The presence of bilateral tubal tumors, a little fever, together with the combination of greatly increased abdominal pain after exertion and relative lack of local tenderness on palpation, are very suggestive of tubal tuberculosis. If the pelvic peritoneum is involved, the tuberculous nodules can sometimes be felt in the cul-de-sac. The diagnosis may, however, be very difficult, as shown by the observation that clinically barely 4 per cent. of all cases of tuberculosis in women are made out to involve the genitalia, whereas, at autopsy, 18 to 30 per cent. are so reported. Emaciation and pallor are not at all invariably present; genital tuberculosis in women is consistent with an absolutely healthy appearance. It may require an exploratory operation to settle the diagnosis.

There has been some difference of opinion as to the value of the tuberculin test in these cases. The cutaneous and conjunctival tests are clearly valueless, and some gynecologists are inclined also to discard the hypodermic method. Others, like Birnbaum, Krömer, and Röpke, insist that a positive focal reaction demonstrates the presence of a genital tuberculosis, whereas an absence of both general and focal reactions makes the absence of a genital tuberculosis nearly certain. The indecisive results of some observers are probably due to a faulty technique.—(Taussig in *Interstate Med. Jour.*)

#### Mercurial Poisoning Per Vaginum.

A young woman introduced six 7.3-grain tablets into the vagina for the purpose of preventing conception. This caused burning pain; the patient was unable to remove the tablets. A physician was summoned, who arrived about thirty-five minutes later and gave vaginal douches of warm water and morphine hypodermically for the relief of the pain. In the course of a few hours intense symptoms of mercurial poisoning developed, i. e., salivation, entero-colitis, muscular tremor, suppression of urine with consequent uremia and collapse. The patient died four days later.

At autopsy there was found an intense necrotic exfoliative entero-colitis, most intense in the rectum and extending as high as the duodenum; a necrotic degeneration of the mucosa and walls of the vagina and vaginal portion of the cervix, the broad ligaments, tubes and ovaries.—(Schildecker in *Am. Journal of Obstetrics*.)

#### Appendicitis and Pregnancy.

Palmer Findley, of Omaha, thinks that obstetricians have been slow to appreciate the frequency and gravity of appendicitis as a complication of pregnancy. Little of importance has been contributed to the literature since the papers of Munde and Abrahams, with the exception of the elaborate study of Schmid, covering the data of twenty years. Nearly all authorities agree that a primary attack is not incited by the pregnant state but that there is a very great liability to recurrent attacks during pregnancy, labor and the puerperium. The great majority of women who have had attacks before becoming pregnant appear to be especially liable to attacks during pregnancy. The explanation for recurrent attacks during pregnancy lies in the vascular engorgement of the appendix, constipation, toxemias, encroachment of the uterus in the early months and in the puerperium, and the occasional presence of adhesions binding the appendix to the uterus and its appendages. None of these factors, however, can be said to create primary attacks. Mild cases are often overlooked and the symptoms ascribed to the ordinary discomforts of pregnancy. Severe cases during the puerperium are often regarded as types of puerperal sepsis. The attacks may be interpreted as intestinal or renal colic, uretero-pyelitis, threatened miscarriage, salpingitis and tubal pregnancy. Severe attacks are apt to interrupt pregnancy and death from sepsis is then extremely likely to occur. Infection extends to the uterus by way of the Fallopian tubes, or by way of the broad ligaments and uterine wall to the placenta. In this manner the colon bacillus has been conveyed to the placenta and fetus. The evidence is convincing that appendicitis

runs a more rapid and destructive course when complicating pregnancy and the puerperium and therefore demands prompt consideration at the hands of the surgeon. All women in the child-bearing period of life, who have suffered one or more attacks of appendicitis present very special indications for the removal of the appendix. Mild attacks, unless oft repeated, may be carried through without operation until the completion of the puerperium, but in severe attacks there should be no delay. Abscesses in these cases are particularly apt to rupture into the free peritoneal cavity. The earlier in the course of both pregnancy and appendicitis the operation is performed the better will be the result. If there is an abscess formation at the beginning of labor the contracting uterus is especially apt to rupture it and disseminate the pus. In severe attacks occurring at the end of pregnancy and without evident abscess formation, the rule should be to induce labor and to remove the appendix at the completion of labor.—(Finley in *Journal A. M. A.*)

## Genito-Urinary Surgery

### Syphilis of the Bladder.

If only by reason of its infrequency of existence or difficulty of recognition, syphilis of the bladder has a deep interest for the urinary surgeon. The small number of cases (34 are to be found in the literature) which have been reported furnish quite competent evidence that the bladder is but rarely invaded by syphilitic processes, and it is worthy of consideration that in almost half of the entire number reported the lesion was either discovered after death, or its nature suggested by the rapidity with which the vesical symptoms cleared up after the institution of specific treatment. In other words, fewer than one-half of the cases were discovered through instrumental means. In a consideration of the detection of syphilitic involvement of the bladder walls, and with an appreciation of the difficulties in the way of an accurate differentiation between specific and other lesions, one reaches the conclusion that a cystoscopic diagnosis cannot but be tentative, and that confirmation must await a Wassermann or the therapeutic test of specifics.

To the cases of vesical syphilis first discovered by cystoscopic examination and afterwards confirmed by other means, hitherto reported by various writers, Mucharinsky adds the nineteenth. In the *Zeitschrift für Urologie* this writer publishes the history of his case. The cardinal symptom was hourly frequency throughout the day and night, with tenesmus. At each seizure the patient passed a few drops of urine. Near the beginning of Mucharinsky's observation of this patient, complete retention took place, this lasting for 35 days and necessitating constant catheterization. In this connection it is interesting to note that retention lasted until the patient had been thoroughly impregnated with mercury, which was given by means of a series of intramuscular injections.

In this case there was complete absence of objective or subjective symptoms of syphilis other than those referred to the bladder. Upon examination of this viscus Mucharinsky found a diffuse, bluish-red hyperemia of the vesical neck and trigone. Situated on the base and occupying an area the size of a 10-cent piece was an ulcerated spot with ragged and irregular edges. Upon this ulcer was a blood-clot. Flakes of mucus were present. Unless one had the possibility of a syphilitic lesion of the bladder fixed in mind at the time of examination, one might easily confuse a lesion such as described by Mucharinsky with tubercle, epithelioma, the "solitary ulcer" of Fenwick or one of several other varieties of vesical diseases. As the author truly states there is nothing typical in the cystoscopic picture of bladder syphilis. He notes that an examination of the histories of the 18 cases published

previously to his, demonstrates that vesical syphilis may have an existence quite independent of other manifestations, thus operating to add further confusion to the diagnosis, and that the distinctive lesion may be as simple a process as a mucous hyperemia or as advanced as a broken down gumma.

While the subject is very interesting, yet, as we state above, we cannot believe that it is possible to make a positive diagnosis of bladder syphilis through cystoscopic inspection of this organ alone. In such cases proof that the lesion is luetic in nature must be looked for in the Wassermann, and in its favorable response to specific treatment, the latter, under the circumstances, to be given the more credence.—(*Am. Jour. Dermatology.*)

### The Treatment of Chancroids.

This article outlines the treatment of chancroid. The author, Toll, reports excellent results from a new method. He points out the inconvenience and impracticability of some of the treatments advised in the books on genito-urinary diseases, such as local hot baths several times daily, careful cleansing with antiseptic solutions, and dressings which have to be moistened every hour or two. He also condemns dusting powders. They mix with the secretion of the chancroid, producing in a short time a hard, caked mass, which prevents the formation of granulations and produces considerable pain and trauma in its removal. The caustic usually employed is too strong and is apt to destroy considerable tissue, bringing about an inflammatory reaction with the production of enough swelling and edema to cause a phimosis. Toll quotes Lydston approvingly as regards cocaine, which appears to have a healing value aside from its anesthetic property. A quarter or half-grain tablet is rubbed into the ulcer with a moist swab. In a few minutes this transforms the ulcer into a vascular healthy surface exuding a bloody serum. Toll has worked out the following very simple line of procedure: Wash the ulcer with a one to 1,000 bichloride solution and dry thoroughly with a cotton swab. Apply a drop of 4 per cent. cocaine solution. After a minute touch up the raw surface with pure phenol and follow in 10 seconds with alcohol. No powders or dressings of any kind are required. Instruct the patient to return in three days. It is astonishing how much improved the ulcer will be. The raw area will be smaller and shallower and surrounded by sloping, healthy skin—giving it the appearance of a miniature crater at the top of a miniature volcano. Repeat to the raw surface every three days until the ulcer is entirely healed.—(Toll, in *New York Medical Journal.*)

### Tuberculosis of the Genito-Urinary Tract.

Although Sahli reports the fact that he has been able apparently to cure an early tuberculous lesion of the kidney through the use of tuberculin, this result is not ordinarily obtained. The exhibition of tuberculin in such conditions is frequently followed by decided improvement. In unilateral infections operative measures are still indicated, since we know that when one kidney is involved, the cause of the trouble is usually removed through nephrectomy, and the bladder symptoms clear up. In bilateral conditions, the excessive pain and urination may be relieved through the use of tuberculin. The writer has seen such marked improvement in one case, that urination at nights was diminished from a total number of 15 to 1, the gain in weight being 12 pounds over a period of six months.

In using tuberculin in such infections, more general reactions should be avoided, since the condition may be unnecessarily intensified. In one instance, the kidney was thought to be the seat of the lesion, a fairly large sized dose of tuberculin caused increased pus and tubercle bacilli in the urine. Eventually it was shown that the trouble was in the vesiculæ, following a previous removal of the testicle on the same side. Massage alone caused a marked improvement.—(Berghausen in *Am. Jour. Dermatology.*)

## CONGRESS ON HYGIENE AND DEMOGRAPHY.

The fifteenth International Congress on Hygiene and Demography was held in Washington September 23-28, under the auspices of the Department of State. President Taft was honorary president of the congress and showed his interest in its purposes in many ways. Delegates from 32 foreign countries and every state in this country were present. The officers were: President, Dr. Henry P. Walcott, of the Massachusetts State Board of Health; secretary-general, Dr. John S. Fulton, of the University of Maryland. The exercises held in Memorial Continental Hall, opened with a plenary session. The address was delivered by Geheimrat Prof. Dr. Max Rubner, Königl. Friedrich Wilhelms Universität, Berlin, President of the Permanent International Commission of the Congresses of Hygiene and Demography. On the evening of September 23d, Sir Thomas Oliver, of the University of Durham College of Medicine, Newcastle, England, spoke on "Dust and Fume—Foes of Industrial Life." The address on the evening of September 24, was by Dr. Jacques Bertillon, Chief of the Bureau of Municipal Statistics, Paris, and on the evening of September 25, by Ministerialrat Dr. Zahn, Director of the Bavarian Statistical Office, Munich.

There were two main divisions of the congress, hygiene, divided into nine sections, and demography. The section on Hygienic Microbiology and Parasitology was under the presidency of Prof. Theobald Smith, M. D., of Harvard Medical School, Boston, and the subjects were symposiums on Filterable Viruses, Special Selective Media for Microorganisms, Parasitic Amebæ, Paratyphoid and Paratyphoid-like Bacilli, with Especial Reference to their Dissemination in Nature and their Relation to Man and Animals and Anaphylaxis.

The section on Dietetic Hygiene and Hygienic Physiology, was under the direction of Prof. Russell H. Chittenden, of Yale University, and the papers presented were on the Role of Inorganic Substances in the Nutrition of Man, Nutrition and Growth, Practical Dietetics, Ventilation in its Hygienic Aspects and the Hygienic Physiology of Exercise.

Dr. A. Jacobi presided over the section on Hygiene of Infancy and Childhood and School Hygiene. The general subjects were Hygiene of Infancy and Childhood, School Inspection, Child Conservation, Dental and Oral Hygiene, Municipal Supervision of Infantile Hygiene and Mental Hygiene.

Dr. George M. Kober, of Georgetown University, was president of the section on Hygiene of Occupations. In this important section these subjects, of growing value, were taken up: The Physiology and Pathology of Work and Fatigue; Fatigue Neuroses; Occupation Neuroses; The Physiology and Pathology of Work in Compressed Air; The Effects of Exposure to Intense Heat on the Working Organism; Diseases and Accidents of Miners and Tunnel Workers; Diseases and Accidents Caused by Electricity; Medical Examination of Employees; Safety Devices and the Prevention of Accidents; Occupational Diseases; The Protection and Welfare of Workers; Government Study of Occupational Hygiene; Sex Problems in Industrial Hygiene.

Dr. Hermann M. Biggs, of the New York City Board of Health, was president of the section on Control of Infectious Diseases. The topics of discussion were: Bacillus Carriers; Importance of Flies and Other Insects as Carriers of Infectious Diseases; Importance of Shell Fish, Particularly Oysters, in Relation to Infectious Disease; Relative Importance of Aërial and Contact Infection in the Dissemination of Contagious Diseases; Control of Disinfection and Influence of Infected Rooms and Fomites in Dissemination of Various Infectious Diseases; Prophylactic Importance of Disinfection in Urban and International Sanitary Administration; Sanitary Measures Against Cerebrospinal Meningitis; The Control of Rabies; The Administrative Control of Venereal Diseases; Role of Artificial Immunization in the Prevention of Diph-

theria, Typhoid Fever, Plague, Cholera, Tuberculosis; Anti-typoid Inoculations; Community Immunization Against Typhoid Fever; The Vaccine Treatment of Bacillus Carriers; Vaccination Against Smallpox in Siam; Role of Bovine Tuberculosis in Production of Human Tuberculosis, and The Administrative Control of Tuberculosis.

The section on State and Municipal Hygiene was under the presidency of Prof. Frank F. Westbrook, of the University of Minnesota. The subjects included: Public Health Organization and Administration; The Sanitary Aspects of Public Water Supplies; Disposal of Sewage and Wastes; Public Health Education; Social Aspects of Public Hygiene; Sanitary Aspects of Food Production and Control, and The Sanitary Betterment of Milk Production and Distribution.

In the subsection on Sex Hygiene, the papers were on: Race Hygiene, Including Eugenics; Social Applications of Modern Principles of Heredity; An Outline Program of Practical Eugenics; The Question of Surgical Sterilization; Pension Systems from the Standpoint of Eugenics, and Sex Hygiene.

In the section on Hygiene of Traffic and Transportation, under Surgeon General Rupert Blue, many subjects of interest were presented.

Military, Naval and Tropical (Colonial) Hygiene, a section presided over by Medical Director Henry G. Beyer, U. S. N., listened to papers on Camp Hygiene; Hospital Ships; Venereal Prophylaxis; Control of Malaria; Prevention of Yellow Fever; Means of Combating Sleeping Sickness; Personal Hygiene; Vaccines, Their Practicability and Promise According to Results Obtained up to Date in the Army; Prevention of Spread of Infectious Diseases on Shipboard; Spread and Prevention of Tropical Intestinal Diseases and Prevention of Beri-Beri.

The division on Demography had an elaborate program. Prof. W. F. Willcox, of Cornell University, presided and among the subjects treated were: Developments of Vital Statistics in the United States Since 1900; Relation of Rural and Urban Populations as Shown by the Census to Public Health Problems; Classification of Causes of Death; Diagnoses of the Causes of Death—The Margin of Error to Which They are Subject in Various Places and for Various Diseases; The Training of Demographers; Mechanical Methods of Tabulating Statistics; The Present Position of Municipal Vital Statistics; Infant Mortality in the United States and Other Countries; Validity of Substitutes for the Birth-rate Proposed or Used in the United States; American Statistics of Marriage and Divorce; Eugenics and Demography; The Present Condition of Criminal Statistics in the United States and European Countries; Progress Toward the Construction of Life Tables for the Population of the United States; Statistics of Pauperism—Sources and Methods; Woman in Industrial Life; The Establishment of a Series of Norms for Death-rates, and The Establishment and Use of Population Norms Representing Constitution According to Sex and Age, and According to Age Alone.

Following the precedent established by previous congresses, an Exhibition on Health was held from September 16 to October 4, at which the hygienic and demographic work of the United States and its dependencies was illustrated. The exhibition was divided in these groups: Vital Statistics and Demography; Growth and Nutrition; Food; The Hygiene of Infancy and Childhood (including Prevention of Infant Mortality and School Hygiene); The Physiology and Hygiene of Exercise; Housing; Industrial and Occupational Hygiene; Communicable Disease; State and Municipal Hygiene; Care of the Sick; Life Saving; Hygiene of Traffic and Transportation; Military, Naval and Tropical Hygiene; Sex Hygiene; Mental Hygiene. The exhibit was under the direction of Past Assistant Surgeon J. W. Schereschewsky, U. S. P. H. S. and it was undoubtedly the most complete exposition of fundamental hygienic principles and their practical methods of application ever seen.

## Surgery

### Acute Pancreatitis.

In the treatment of acute pancreatitis Deaver (*Archives of Diagnosis*) is strongly opposed to hasty intervention. He says he is aware that the weight of opinion is in favor of immediate operation, and that statistics are brought forward to support this opinion, but he is inclined to doubt the value of such statistics. In the first place, medical recoveries, and there are such, are less apt to be reported because of the difficulty of substantiating the diagnosis without operation or post-mortem. Surgical recoveries, on the other hand, are more likely to be reported than fatalities. Another and more important reason for the recovery from operation of many, if not the majority of cases, is due to the fact that the disease had at the time of operation already been localized, in a degree at least, in the neighborhood of the pancreas and the lesser peritoneal sac. These cases adduced in support of immediate operation are in reality arguments against it. When this condition is recognized in its earliest stages, in my opinion, with few exceptions the line of treatment to be carried out is substantially that which is now being carried out with such success in the treatment of severe spreading peritonitis of three or more days' duration, namely, anatomic and physiologic rest of the affected part and general supporting treatment. More specifically, we should place the patient in bed in the Fowler position, if collapse does not contraindicate; a light ice bag should be spread over the epigastric and hypochondriac regions, gastric lavage should be freely used for the vomiting, which is such a frequent and distressing accompaniment. Nothing must be given by mouth, and the bodily need for water should be supplied by proctoclysis. The pain of this condition is so great as to require morphia, which must be given sparingly in only such quantities as will suffice to take the keen edge from the agonies of the patient. Under this treatment some patients will fail to recover, as indeed they would under any treatment. Those whose lesion is not sufficient to prove immediately fatal will react, the general condition will improve and the symptoms and signs will make towards localization in the pancreatic region. Now, it is quite as imperative not to delay unduly as it is not to open the abdomen precipitately. So soon as the process of localization is apparent operation must be performed. This occurs at any time from the second day on. Each case must be closely watched, and the earliest moment seized when the patient is in a state that offers a reasonable chance of his enduring both anesthesia and operation and his abdominal condition offers a plain local point of attack. Deaver's experience leads him to commend most strongly the left loin incision when there is a strong probability of the presence of an exudate in the lesser sac. This will not suffice for all cases, however, especially those in which the head of the organ is chiefly affected. If doubt exists, the anterior incision should be made for exploratory purposes, and if it seems necessary, drainage of the pancreas and surrounding extravasations may be made through this incision. If on inspection the inflammatory mass appears capable of attack posteriorly, the anterior incision should be closed and drainage instituted through the loin. Both gauze and tubular drainage must usually be employed, and it should be carried directly to the infiltrated tissues, scarifying or incising the overlying tissue if necessary.

### The Basic Cause of Flatfoot.

James R. Mitchell, of Fort Worth, Texas (*Medical Record*), approaches the subject of the etiology of flatfoot from the standpoint of the physiological chemist rather than from that of the orthopedist. He dismisses the usually assigned causes, such as misshapen shoes, walking on solid pavements, weakening of tendons, overweight, faulty position of feet in walking, etc., as of far less relative importance than lime starvation.

He thinks that the advocates of the causes heretofore alleged have guessed at them instead of reasoning from the facts. Mitchell points out that one-half of the adult population suffer from flatfoot in some degree. It is the chief cause for rejection of army applicants. Out of 123 candidates recently examined 22 had normal feet. The strength of the arch is bred in the bone. A demineralized diet is responsible for weak bones and their collapse under strain. The American diet is not well supplied with minerals. We eat wheat and rice that have been subjected to processes that practically deprive them of their mineral content. We feed children condensed milk. We use vegetables raised upon played-out alluvial soil and cook them in water which takes up what minerals they may contain. We eat in a hurry, thus taking away fair opportunity for the digestive juices to dissociate and combine with the minerals presented for use, and we drink flood water stored in reservoirs away from all contaminating contact with Mother Earth. Flatfoot can be prevented, according to Mitchell, by observance of the principles laid down by him. Our diet should consist of foods rich in lime salts, such as milk, eggs fruits and vegetables; water rich in minerals should be drunk and decalcifying acid foods avoided.

### Gall Bladder Surgery.

B. B. Davis, of Omaha (*Surgery, Gynecology and Obstetrics*), analyzes the end results of gall-bladder surgery. Unless the life of the subject of gall-bladder disease can be shown to be more comfortable, on the average, after operation than before, he might better endure his ills as best he can and avoid surgery. To make a good case for the numerous operations made on the gall-bladder, it must be shown that the ratio of comfort and good health following these operations is more than enough to offset the danger, pain, loss of time, and pecuniary cost that they entail. Out of 58 cases on whom Davis performed primary cholecystectomy, only one has had enough postoperative trouble to require relief by secondary operation to break up adhesions that were interfering with the emptying of the stomach. Relief was complete eighteen months after this operation. Of 176 cases of primary drainage, eleven have been such sufferers as to be willing to have another operation performed. The second operation, in ten of these cases, was cholecystectomy, with relief finally in all of them, but at least two of these continued to have pain for several months. One of the cases operated a second time did not seem to show sufficient cause for cholecystectomy, and a drainage operation was done. The relief was only partial. Aside from the eleven cases operated secondarily for unrelieved or recurrent symptoms five were readmitted to the hospital for medical and massage treatment without operation. Two of these patients were relieved and two received no benefit and are still suffering. The fifth case was readmitted twice, and each time was given relief by rest, hot packs, Carlsbad salts, careful diet and massage. Cholecystectomy will have to be done if he returns again. Besides the five cases just mentioned twelve other cases complained greatly for a time, but as far as it has been possible to ascertain most of them are better and at least seven are completely relieved. Regarding fistulae, several have not closed at this writing—three to six months after operation. One has been open for a year, but there is no pain, the general health is excellent, and the woman will not consent to another operation. A mucous fistula was operated a second time. Occlusion of the cystic duct was found and cholecystectomy gave complete relief. As nearly as it has been possible to learn the postoperative history of the cases, an encouragingly large number are practically relieved immediately and completely as soon as they recover from the operation. Occasionally a patient who has been comfortable while lying in bed begins to have a pain and a dragging sensation as soon as he begins sitting up. Others leave the hospital feeling perfectly well, but begin to have more or less discomfort in the region of the

gall-bladder as soon as they begin to move about actively. Without definite figures on this point Davis estimates that 25 to 30 per cent. of cases have varying degrees of discomfort, from only a slight feeling of uneasiness to pain severe enough to disable them for a time. The great majority of such cases completely recover in from one to six months.

#### Pediatric Surgery.

Le Grand Kerr, of Brooklyn (*Med. Rec.*, June 22, 1912), in a paper entitled "Surgery from the Pediatric Standpoint," states that the child's immature organism reacts very differently from the adult's in respect to injury, disease and infection, and this must be thoroughly understood by the surgeon. The pediatrician and the broad-minded and well-equipped general practitioner ought more frequently to be given a much larger place in the deliberations and activities of the surgeon. These men often see surgeons do things to children the inadvisability of which is perfectly clear and patent to them. Too many surgeons do not realize their incompetence in this field. Of especial interest in a diagnostic way in children is appendicitis. Acute appendicitis is frequently diagnosed in children when it does not exist. This is probably because the question of appendicitis is so constantly forced on our attention that it is usually the first thing thought of when the symptom of right-sided abdominal pain is presented. And yet abdominal pain is one of the least important symptoms of acute appendicitis in children. Why give so much prominence to this one disease which causes abdominal symptoms and disregard those less common but just as important other diseases which are frequent in childhood? Right-sided lobar pneumonia is often the condition actually present. Kerr has known of instances where disturbance due to intestinal parasites and distension of the bladder have been mistaken for acute appendicitis. The lobar pneumonias which sometimes follow appendectomies in children, and which are attributed to the anesthetic, are not infrequently of pre-operative character. In such cases the appendix is found normal or nearly normal. A large number of the cases of chronic appendicitis in children are unrecognized as such, but are designated as acute exacerbations of some chronic digestive disturbance or are lightly dismissed under the pleasingly popular misnomer of "bilious attacks." If these children were thoroughly examined between their attacks there would often be found a thickening about the appendix and the only adequate measure of relief—appendectomy—would be suggested. The surgeon does not see many of these cases because the indefinite symptomatology does not emphasize the need of adequate surgical intervention. It is distinctly a problem for the general practitioner, for he it is who observes these cases before they suffer an acute attack, but all should heed the warning: "Be suspicious of all so-called bilious attacks in children."

#### Cathartics in Gastro-Intestinal Disorders of Children.

Isaac Abt, of Chicago (*Interstate Med. Jour.*, July, 1912), attacks the custom, founded upon long usage, of treating the gastro-intestinal disorders of infancy by the use of cathartic drugs. While laxatives have their place in infantile therapeutics, they are much abused. The long continued use of laxatives may be irritant, may change a mild dyspepsia into a severe lesion, or protract a disease process which has already been established. "The patient is being thoroughly cleaned out." It would seem a rational reflection that if satisfactory evacuations have taken place, no more cleaning out is possible. Long continued cathartics will not remove abnormal epithelial cells, nor regenerate them. It is a fallacy to regard the presence of mucus in the stools as necessarily an indication for catharsis. Such mucus is often the result of the irritation of cathartic drugs. Children with mucous stools, colic and malnutrition, often show improvement immediately a

cathartic drug is discontinued and a rational diet instituted. Abt's experiments at the Michael Reese Hospital in Chicago have shown conclusively that the stools of normal children can be rendered abnormal by the use of laxatives. It is possible to produce diarrhea and mucous stools where no such conditions had previously existed. Chemical tests made during Abt's experiments showed traces of blood in most of the cases. Calomel was the most irritating drug, saturated solution of magnesium sulphate in dram doses given for three successive days to infants of one year slightly less irritating than calomel, and castor oil in one teaspoonful doses the least irritating of all. The conclusions are obvious. Can the harm be estimated that is being done by giving long-continued doses of laxative drugs to children who are already ill?

#### Empyema.

E. M. Von Eberts (*J. A. M. A.*) reports three cases of chronic empyema treated by negative tension drainage and discusses the method. The minimum tension was fixed by him as 5 mm. because this is approximately the tension secured by the ordinary Politzer bag which the patient, nurse or relative may be trusted to use with safety after emptying the bulb. Another reason was that higher tensions favor excessive exudate and oozing of blood from pleural granulations. He also deduces the lesson from his cases that in chronic unopened empyemas which have not undergone postoperative pneumothorax, thickening and fixation of the walls are not always to be looked for. When these are found after the usual method of drainage has been used it may be assumed to be the product of such pneumothorax and consequent secondary infection. The negative tension drainage causes free transudation of active serum which tends to suppress suppuration and later to promote the development of the needed healthy granulations required for permanent anchorage of the re-expanded lung. The essential of negative tension drainage is the constant maintenance of a partial vacuum within the cavity. The apparatus he uses has been previously described by him. He gives full directions for the renewal of the dressings in negative tension drainage, required every four days.

#### Hysterotomy.

John B. Deaver (*J. A. M. A.*) says that his experience with the few cases he has operated on has been so satisfactory as to warrant bringing this operation up for consideration, in the belief that it should be kept in mind and employed in certain selected cases more often than is now the case. He wishes especially to urge that placenta previa must be considered an indication for hysterotomy which is to be given the preference over any other method of delivery. In the toxemias of pregnancy in their later and more severe stages it is to be seriously considered as a rival of less radical measures. In certain myomatous uteri and in the presence of pedunculated intra-uterine growths or endometrial changes we may on occasion find it of great help in relieving our patients most expeditiously of their symptoms. The chief contra-indication is the presence of intra-uterine infection, either demonstrated or strongly suspected. He would not at the present time open a uterus in the interior of which he feared to find infection. If this precaution is observed the operation is one of extreme simplicity and low mortality, but should be undertaken only by an experienced surgeon who is a master of intra-abdominal technic.

Only about 10 per cent. of cases of cervical rib have any symptoms at all. It must be differentiated from (1) aneurysm of the carotid, subclavian or vertebral arteries; (2) brachial neuritis; (3) bursitis of the subcapsular or subdeltoid bursae; (4) occupation neurosis. The treatment is obviously surgical and the results usually satisfactory in the cases that have produced symptoms.

# Diet, Hygiene and Nursing

## BACTERIOLOGY.\*

WILLIAM HENRY BOESE, M. D.,  
Assistant Pathologist to Lebanon Hospital; Assistant Attending  
Physician to University and Bellevue Hospitals  
New York.

### PART V.

(Continued from p. 284, September.)

#### *The Use of Animals for Diagnostic and Test Purposes:*

It may be of interest to you to know that to make a diagnosis in some cases and to test certain bacteria or their products, it is necessary to resort to the use of living animals. This may be required first when we wish to make a diagnosis in a case where the bacteria are so few that we can neither detect them in a smear with the microscope, nor grow them on culture media. Thus in tubercular lesion, as for example in tubercular pleurisy, we often inject some of the suspected material into a rabbit or guinea pig. If the material contains tubercle bacilli, tubercular lesions will be developed in the animal. Secondly, we may separate a pure culture of one organism from a mixture of many, by injecting some of the mixture into certain suitable animals. Thus, by inoculating sputum a pure pneumococcus septicæmia or a pure tuberculosis may develop. Thirdly, we may have several cultures similar in kind and growth but differing in virulence. Thus we may have several cultures of diphtheria bacilli. One culture may be very deadly while the other may be very mild in its poisonous effect or may be harmless. The only way to tell them apart is by injecting them into guinea pigs and watching the effects of the different cultures. Finally we may use animals to test the strength of sera used for injection in diseases. For instance, the antitoxin serum of diphtheria is tested by injecting it, together with toxin of poison of diphtheria, into guinea pigs and noting what quantity of the toxin can be neutralized by a definite quantity of antitoxin.

Animals are usually inoculated by injecting with a hypodermic needle either under the skin or into a vein. Other means of inoculation sometimes practised are rubbing into the abraded skin; injection into anterior chambers of the eye; injection into body cavities, as, for instance, the peritoneal cavity; inhalation of an infected spray or dust; injection into the trachea; passing infected material into the intestinal tract, and injection into the brain substance after trephining.

#### *The Relation of Bacteria to Disease:*

In considering the relation of bacteria to disease we must remember that both the body invaded and the bacteria which invade, are living organisms. Just as the bacteria produce substances which act as poisons to the human body, so the human body produces substances which act as poisons to the bacteria. If we remember this fact we can easily understand that bacteria can be present in the body and still disease may not result, since the poisons of the bacteria have caused the production of sufficient anti-poisons in the body to neutralize their effect. As soon as the anti-poisons are either overcome or not produced disease results.

The period between the time when the bacteria enter the body and the time when enough bacterial poisons have accumulated to produce symptoms or physical changes in the body tissues is called the incubation period of disease.

The local effect of the bacterial poisons upon the body cells gives rise to the various kinds of inflammation such as serous and fibrinous when serum and fibrin exude into the inflamed parts; purulent when pus is formed; croupous when a membrane is formed; hemorrhagic when blood exudes; necrotic and gangrenous when the parts die. The different forms of inflammation are produced by certain definite forms of bacteria. Thus, the pneumococcus frequently causes a serum and fibrinous inflammation of the pleura. Pus is especially formed by

the streptococcus, pneumococcus, and staphylococcus. Diphtheria bacilli cause a croupous inflammation and also necrosis and gangrene.

#### *How Bacteria Produce Injury to the Human Body:*

There are two ways by which bacteria produce local injury, by their mechanical presence, and by the poisons produced in their life processes. Their mechanical presence is only of account when bacteria exist in such numbers as to interfere mechanically with the circulation, that is blood circulation. This is the condition in septicæmia or pyæmia. In such cases the bacteria actually block by their numbers the circulation of the blood in the capillaries. The second element, that is, poisons produced by bacteria, is of greater importance. These poisonous substances can be separated from culture fluid in which bacteria are grown or we can abstract them from the body of the material. Such substances injected into the body produce practically the same lesions as the bacteria themselves when developed in the body, even though no bacteria be injected. Such substances, with but few exceptions, attract the leucocytes, or white blood cells and consequently suppuration usually follows.

Besides the local effect of bacteria we have certain symptoms caused by the bacterial poisons which are absorbed into the circulation. Fever is produced by practically all bacterial poisons under certain favorable circumstances. The conditions necessary are that sufficient poisons be absorbed, but at the same time that they be not absorbed too rapidly. Fever usually indicate a healthy reaction to poison. If, however, the poison be absorbed too rapidly the system becomes overwhelmed and we have a low grade of fever with marked toxæmia or poisoning. Such a condition we sometimes see in peritonitis, when a large amount of toxin is suddenly absorbed through the peritoneum.

The effect of the bacterial poisons on the blood is usually to increase the number of leucocytes and to lessen the hemoglobin. In certain few uncomplicated infections, such as typhoid fever, malária, influenza and tuberculosis, the leucocytes are not increased. Some bacterial poisons directly injure red blood cells. Several bacterial poisons produce convulsions, as for example, the tetanus toxin.

#### *Quantity and Virulence of Bacteria in Infection:*

The number of bacteria necessary to produce infection depends upon the virulence or strength of the germ. A virulent germ requires the introduction of but few bacteria, while a non-virulent, or very weak germ requires the presence of many to produce infection. The virulence or strength of bacteria may be markedly varied for the same species. For example, we may have a diphtheria germ taken from one case of diphtheria, which when grown in suitable nutrient broth produces a poison of such a strength that a guinea pig of a certain weight will be killed by the injection of one cubic centimetre of the toxin, while a diphtheria germ taken from another case and similarly grown will produce a poison so strong that only .005 of a cubic centimetre is necessary to kill a guinea pig of the same weight. Remembering this difference of virulence of the same germ we can readily understand why the disease in one case may be very mild, while in another case the same disease may be most deadly.

As the conditions for growth become less favorable to bacteria the toxins also become weaker. For example, we can take a germ whose toxin, or poison, is of a certain strength and by developing it at the maximum temperature at which it will grow we can very greatly reduce the strength of its toxin. On the other hand, in general, as the surroundings of a germ become more favorable for its growth the poisonous properties of that germ increase. Thus we can increase the toxic properties of a streptococcus taken from a case of human sepsis by inoculating it into a rabbit. The living body of the rabbit furnishes a most favorable media for the growth of that streptococcus.

\*Lecture delivered before the nurses of Lebanon Hospital, N. Y.

**Mixed Infection:**

By mixed infection is meant infection by several different pathogenic bacteria. In general, all inflammations of mucous membranes and skin are mixed infections. Blood infection, however, is usually due to one definite form of bacteria. Secondary infection means an infection following a preceding or primary infection. For example, a bronchial pneumonia following laryngeal diphtheria would be a secondary infection. This example also shows us what relation may exist between different associated germs of a mixed infection. The one germ paves the way for the development of the other by lowering the vitality of the part secondarily infected. In the example, the germ of diphtheria lowers the resistance of the lungs so that the pneumonia germ can take hold. Germs associated in mixed infection may either hinder or favor each other's development. Thus, a pus germ is antagonistic to the development of anthrax, while the pus germ, by virtue of its using up oxygen favors the development of tetanus, or lockjaw, bacillus when mixed with it, since the latter does not grow in the presence of oxygen.

## Hospitals and Sanitaria

### DEFECTS IN AMERICAN HOSPITALS.

Dr. Neumann, the well-known Austrian authority on ophthalmology, who has recently spent some time in America examining our hospital system, has found serious defects therein. He thoroughly approves of our methods of construction, but he lays particular stress on the weakness of hospitals as scientific institutions. The great scarcity of autopsies and the superabundance of physicians of equal rank impress him most unfavorably.

Dr. Neumann's criticisms have caused widespread comment and many physicians familiar with the best hospitals are inclined to agree with the Austrian savant. No less an authority than Dr. Theodore C. Janeway, Professor of Medicine in the College of Physicians and Surgeons of Columbia University, and one of the best known physicians in America, found the subject of such importance that he discussed it over his own signature in a New York daily. He said:

"No one feels these two defects in our New York hospitals more keenly than do our medical teachers working in the hospitals. While the standards of care and nursing are unsurpassed anywhere in the world, the opportunities for the training of competent physicians, and especially of leaders in clinical medicine and in medical teaching, are not such as to fill Americans with patriotic pride.

Medical science nowadays is highly complex, and is being advanced by observation and experiment along a wide frontier. The ordinary practicing physician has not the time, and seldom the training, for productive scientific work. Yet, for the most part, our hospital services are in charge of practicing physicians. This arrangement was abandoned in Germany many years ago, hence our medical men who seek advanced instruction go to Germany to obtain it. More important to the members of the community as individuals who may at any time fall ill and be in need of medical treatment, is the character of the scientific training which the future physicians are receiving as students. This is not only much less stimulating scientifically than in Germany, because of the lack of scientific organization, but is fatally defective at the root of all training—in diagnosis. Medical diagnosis in this country, except for the few men of exceptional opportunities, is largely a matter of clever guessing and seldom knowing whether or not one is right.

The one firm foundation for the successful diagnosis of disease is the proof afforded by post-mortem of every mistake made. Unless students learn by the mistakes of their professors, and later as hospital physicians by their own mistakes, they will never become good diagnosticians, and unless they are good diagnosticians their patients will be inadequately cared for.

The percentage of post-mortems among patients dying even in our municipal hospitals is absurdly small as compared with that in other civilized countries. Few hospitals in New York have autopsies on more than a quarter of the dead, and many have less than 10 per cent. In foreign hospitals well over

75 per cent. is the rule—in Vienna practically 100 per cent. Even in so nearby a city as Montreal, in the splendid Royal Victoria Hospital and in the old Montreal General Hospital, the hospital reserves the right to perform an autopsy upon every patient dying within its walls. New York State laws governing the performance of autopsies are such as to make it difficult to know whether any autopsies are absolutely legal, except those performed by coroners. Hospitals have been sued on absurd pretexts and have been mulcted damages for the performance of autopsies, until now they are afraid to assume the responsibility except upon written consent of the next of kin.

With our large foreign population the next of kin frequently lives in a foreign land; and, though the relatives who are to bury the body would consent, hospitals have been known to decline an autopsy. In addition, religious scruples and sentimental objections have an influence in this country which they do not possess abroad among similar classes. Nothing could more advance medical science and more rapidly increase the efficiency of everyday medical practice in New York City than the education of the vast mass of the population, so that they may appreciate the fundamental necessity for autopsies if they are to have physicians of any value to them when their own time comes to be ill."

Most American physicians realize the advantage Germany, with its paid specialists in charge of hospitals, has over this country; but until we have a radical reorganization of our hospital system our best diagnosticians will continue to be our best guessers.

### Unit System in Hospital Construction.

The unit system of equipment has been adopted in most modern business offices. It enables the growth of the equipment to keep pace with the demands of the work. For the same reason hospitals are commencing to appreciate the value of the unit system in building, so that the future needs of the institution may be most economically and satisfactorily met. This is true of the medical and surgical pavilions and of the power plant.

In discussing this subject the *Hospital World* of Toronto remarks:

If a unit is represented by a 40-bed, two-story pavilion, room should be provided on the ground plan for adding similar units. The same principle may apply to the operating room suite, to the laboratory building and to the pathology building.

The unit idea may be utilized satisfactorily in another sense. Suppose a hospital medical organization is constituted in such a way as to have three physicians and three surgeons of equal status. Give each physician a flat or a pavilion as his own particular domain, a hospitalette within a hospital, with his own resident and his own head nurse, and his own equipment. Let each of the three surgeons have his own operating room in his own part of the building. Let him have his male patients on one story, his women on the other, or all on the same story—one sex on one side of his head house, the other on the other. This will make for economy, though the initial cost may be greater, particularly on the surgical side. Such an arrangement will save an administrator an endless amount of bother and worry. Besides, he will be enabled to check up one surgeon against another in the matter of cost of apparatus, instruments, dressings, etc.; head nurses will emulate one another on the point of economy and so with resident officers. This plan has been tried out in the Western Infirmary, Glasgow, and will be tried in the new Toronto General Hospital.

Again the unit system may be applied to the whole plan of the medical organization. That is to say, there is one chief surgeon, one chief physician, one chief gynecologist, and so on with the other services, depending on the number of patients. Each of these chiefs has as many visiting assistants and resident assistants as he may require; but all the responsibility for the efficient carrying on of the scientific part of the patients devolves on each one of these heads.

The hospital unit system is an idea borrowed from Germany (one of many ideas, by the way), where it has been tried with great success. Johns Hopkins has adopted this method of building, and it is not unlikely that in future most of our institutions will be constructed along the lines set forth above.

Irrigation of the throat with ice water from a fountain syringe will relieve the congestion and the pain in acute follicular tonsillitis.—(*American Journal of Surgery*.)

## The Physician's Library

**The Sexual Life of the Child.** By Dr. Albert Moll. Translated by Dr. Eden Paul. Cloth. 339 pages. Price \$1.75 net. New York: McMillan Company, 1912.

After reading a great variety of trash on the subject of sexual education of the boys and girls of this generation, it is a pleasure to have the subject taken up in a frank, open, dignified manner by Dr. Moll. He leads one through the mazes of the sexual development of the child, and so clearly analyzes its real feelings that one instinctively feels one's self well qualified to interpret child psychology and to apply the lessons gained therefrom. Moll advises the sexual enlightenment of the child at the proper time and believes we should be guided particularly by the indications of psycho-sexual development.

**Principles of Microbiology.** By Veranus A. Moore, M. D., V. M. D., Director of the New York State Veterinary College at Cornell University. Cloth. 506 pages. Illustrated. Price \$3.50 net. Ithaca, N. Y.: Carpenter & Co., 1912.

While this work is intended for veterinary students just commencing the study of the subject, it is one which many laboratory men will be glad to obtain. The book is written by one of the leading authorities on comparative pathology and bacteriology in this country and is entirely authoritative. It is instructive to follow out the bacterial relationship between the human and animal body, and the writer has been careful to explain the close connection. To the student of bacteriology who desires to roam into the realms of comparative study this book will prove of lasting interest.

**Landmarks and Surface Markings of the Human Body.** By L. Bathe Rawling, F. R. C. S. (Eng.) of St. Bartholomew's Hospital, London. Cloth. 96 pages. Illustrated. Price, net, \$2.00. New York: Paul B. Hoeber, 1912.

To the physician whose work in any way depends upon anatomy this book will prove of interest. It takes up the minutest anatomical signs and by the aid of well-defined illustrations brings out every observable detail of the human body. The book contains as well some interesting facts regarding lengths of tubes and passages, weights of organs, etc., carefully correlated.

**Ralph W. Webster, M. D., Ph. D.,** author of *Diagnostic Methods, Chemical, Bacteriological and Microscopical*, 2d edition; Assistant Professor of Pharmacologic Therapeutics, and Instructor in Medicine, Rush Medical College; Director of the Chicago Clinical Laboratory; member of the American Medical Association, the Illinois Medical Society, the American Association of Pathology and Bacteriology, and the Chicago Pathological Society. Although out of the medical school 12 years, he is one of the best known pathologists in the country.



**Food for the Invalid and the Convalescent.** By Winifred Stuart Gibbs, of Teachers' College, Columbia University. Cloth. 81 pages. Price 75c. net. New York: The McMillan Company, 1912.

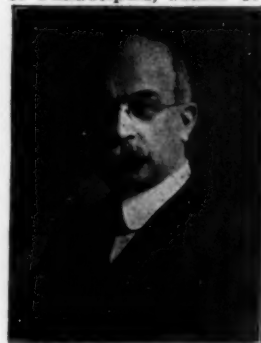
Useful diet lists of various descriptions are contained in this valuable little compendium. It is designed especially to serve dispensary and social workers and serves its purpose admirably, though it is not entirely suited for general use.

**The Care of the Skin and Hair.** By W. A. Pusey, A. M., M. D., of the University of Illinois. Cloth. 182 pages. New York: D. Appleton & Co., 1912.

This little book gets right down to the fundamentals and gives simple but effective rules regarding the care of the general health, the skin and the hair. It demolishes some of our time-honored theories and clearly demonstrates the value

of soap, water and other accessories in the prolongation of life. The book is worthy of study.

**Albert P. Brubaker, M. D.,** of Philadelphia, author of a *Text Book of Physiology*, Illustrated, etc.; Professor of Physiology and Medical Jurisprudence in the Jefferson Medical College; member of the Medical Society of the State of Pennsylvania, the Philadelphia Pathological Society, the Philadelphia Neurological Society; well known as a teacher, author and physician. Dr. Brubaker has done a great deal of original research work along physiological lines and his labors have been widely recognized. He is one of America's most painstaking physiological investigators and his text book shows the valued results of his endeavors.



**A Compend of Human Physiology.** By Albert P. Brubaker, A. M., M. D., Professor of Physiology and Medical Jurisprudence in the Jefferson Medical College. Thirtieth edition. Cloth. 248 pages with illustrations. Price \$3.00 net. Philadelphia: P. Blakiston's Son & Co., 1912.

On general principles we do not wax enthusiastic over compends. In this day of the survival of the fittest in the practice of medicine it behooves the student to absorb every particle of knowledge on every subject he may study. If he depends on compends he will often build his educational structure upon the sands of ultimate failure. For this reason we discourage such books, but Brubaker has broken away from the beaten compendium track and has so logically correlated his facts that he has given a really helpful book. It has been sequentially compiled, is entirely up to date and though intended for students, we recommend it especially for physicians desiring to brush up on physiology.

**Pharmacology and Therapeutics.** By Horatio C. Wood, Jr., M. D., Professor of Pharmacology and Therapeutics, Medico-Chirurgical College, Philadelphia. Cloth. Illustrated. 430 pages. Price \$4.00 net. Philadelphia and London: J. B. Lippincott Company, 1912.

At last, after years of neglect in this field, the student of pharmacology is coming into his own. H. C. Wood, Jr., possessor of a name to conjure with in the realm of materia medica, has presented pharmacology to the student in a manner entirely out of the ordinary. The method of presentation is one which must commend itself to every one. After classifying each drug according to its therapeutic activity, as drugs "used to affect secretion" to "affect the nervous system," to "affect circulation," etc., he goes into detail regarding each group. The individual drug is then discussed as to physiological and therapeutic action and methods of administration. In certain drugs of toxic nature he takes up the toxicology, absorption, elimination and various subjects of particular interest. A valuable feature is the excellent reference list accompanying every group, showing the source of the opinions given. This book is an outgrowth, possibly, of the compend system, though it can in no way be classed as an integral part of the compendium idea. While it is obviously impossible in the limits of a 400 page book to go deeply into the chemistry and relations of the great number of drugs under consideration, there is sufficient in this volume to give every physician, except the research worker, all he may need for an intelligent comprehension of the action of drugs.

**The Surgical Clinics of John B. Murphy, M. D.,** at Mercy Hospital, Chicago. Volume I. Numbers III. and IV. Octavo of 174 pages and 154 pages respectively. Illustrated. Published bi-monthly. Price per year, paper, \$8.00. Cloth, \$12.00. Philadelphia and London: W. B. Saunders Company, 1912.

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